m | r | wolfe
& associates, p.c.
attorneys-at-law

November 14, 2019

Kim Carvalho
Assistant to the City Manager and Deputy City Clerk
City of Del Rey Oaks
650 Canyon Del Rey Blvd.
Del Rey Oaks, CA 93940
kcarvalho@delreyoaks.org

Re: Initial Study/Negative Declaration – Del Rey Oaks Housing Element

Dear Ms. Carvalho:

I write on behalf of LandWatch Monterey County to comment on the Initial Study/Negative Declaration for the proposed Del Rey Oaks Housing Element. LandWatch supports the efforts by Del Rey Oaks ("City") to comply with the requirement to update its Housing Element and to accommodate its share of the Regional Housing Needs Allocation ("RHNA").

However, LandWatch cannot support the proposal to locate that housing in the former Fort Ord. The proposal relies on the purported availability of a supply of groundwater through the Marina Coast Water District. Contrary to the Negative Declaration, use of that water supply would in fact cause, or make a considerable contribution to, significant impacts to water resources. Thus, CEQA requires that the City prepare an Environmental Impact Report before adopting the Housing Element.

In addition, the City has no enforceable claim on any water supply to serve Fort Ord development after the Fort Ord Reuse Authority sunsets in less than eight months.

Furthermore, the proposal to locate housing within Sites 1 and 1a in the former Fort Ord is inconsistent with the City's General Plan and the Fort Ord Reuse Plan, both of which call for commercial land use on these sites, not residential land use.

The City should instead locate its share of the RHNA in the other available sites identified in the Housing Element. Contrary to the Housing Element, a water supply for new development within the City will become available by 2021 through the Monterey Peninsula Water Supply Project, well within the 2015-2023 planning period for which this Housing element has been prepared. In fact, the Monterey Peninsula Water Management District is now developing plans to supply water for new housing, with an emphasis on affordable housing, *before* 2021.

I. If the City permits residential development within the former Fort Ord using groundwater, it must prepare an Environmental Impact Report.

A. CEQA mandates preparation of an EIR if a project may have a significant effect on the environment.

Under CEQA, a full EIR is required for any project that a public agency proposes to approve that may have a significant effect on the environment. (Public Resources Code, §§ 21100(a), 21151(a); 14 CCR, § 15064(a)(1).) An EIR must describe the proposed project and its environmental setting, identify and analyze the significant effects on the environment, state how those impacts can be mitigated or avoided, and identify alternatives to the project, among other requirements. (Public Resources Code, §§ 21100(b), 21151; 14 CCR §§ 15124, 15125.)

"The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project can be minimized; and to indicate alternatives to such a project." (Public Resources Code, § 21061.)

Courts have "repeatedly recognized that the EIR is the 'heart of CEQA.' [Citations.] 'Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR "protects not only the environment but also informed self-government.'" (*Laurel Heights Improvement Assn. v Regents of University of California* (1993) 6 Cal.4th 1112, 1123.) By contrast, a "negative declaration" is a statement that briefly explains why a project will have no significant environmental impact and therefore will not require an EIR. (Public Resources Code, § 21064.) A negative declaration is proper only if the agency determines based on an initial study that there is no substantial evidence whatsoever that the project may have a significant effect on the environment. (Public Resources Code, § 21080(c)(1), (d); 14 CCR §§ 15063(b)(2), 15070(a).)

B. An EIR is required if there is a "fair argument" that the project may have a significant effect.

Based on the above Legislatively-declared principals, a strong presumption in favor of requiring preparation of an EIR rather than relying on a negative declaration is built into CEQA. This presumption is reflected in what is known as the "fair argument" standard, under which an agency must prepare an EIR whenever substantial evidence in the record supports a fair argument that a project may have a significant effect on the environment. (*Quail Botanical Gardens Found., Inc. v City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602; *Friends of "B" St. v City of Hayward* (1980) 106 Cal.App.3d 988, 1002.) "Substantial evidence" under CEQA includes "facts, reasonable assumptions

predicated upon facts, and expert opinion supported by facts." (14 CCR, § 15384(b).) "Significant effect upon the environment" is defined as "a substantial or potentially substantial adverse change in the environment." (Public Resources Code, § 21068; Guidelines, § 15382. A project "may" have a significant effect on the environment if there is a "reasonable probability' that it will result in a significant impact. (*No Oil, Inc. v City of Los Angeles* (1974) 13 Cal.3d 68, 83 n16; *Sundstrom v County of Mendocino* (1988) 202 Cal.App.3d 296, 309.) If any aspect of the project may result in a significant impact on the environment, an EIR must be prepared even if the overall effect of the project is beneficial. (14 CCR, §15063(b)(1); *see County Sanitation Dist. No. 2 v County of Kern* (2005) 127 Cal.App.4th 1544, 1580.)

In effect, the fair argument standard precludes agencies, as well as courts, from weighing conflicting evidence. If substantial evidence supports a fair argument that a project may have a significant environmental effect, the lead agency must prepare an EIR even if other substantial evidence before it indicates the project will have no significant effect. (*See Brentwood Ass'n for No Drilling, Inc. v City of Los Angeles* (1982) 134 Cal.App.3d 491; *Friends of "B" St, supra*, 106 Cal.App.3d 988; 14 CCR, §15064(f)(1).) Thus, the fair argument standard essentially bars agencies from weighing competing evidence to determine who has a better argument concerning the likelihood or extent of a potential environmental impact. (*Rominger v County of Colusa* (2014) 229 Cal.App.4th 690, 713; *Friends of "B" St., supra*; *Architectural Heritage Ass'n v County of Monterey* (2004) 122 Cal.App.4th 1095, 1109.)

Even in marginal cases where it is unclear whether substantial evidence exists that a project may have a significant effect on the environment, and/or when experts disagree over the significance of an impact, the lead agency must still treat the effect as significant and prepare an EIR. (14 CCR, §15064(g).) Thus, if qualified experts disagree about either the likelihood or magnitude of a project's environmental impact, the agency must assume that a significant impact may occur and must prepare an EIR. (*City of Carmel-by-the-Sea v Board of Supervisors* (1986) 183 Cal.App.3d 229, 249.) Stated otherwise if qualified experts present an agency with conflicting evidence on the nature or extent of a project's impacts, the agency must accept the evidence tending to show that the impact might occur. Evidence to the contrary, even when presented by qualified experts or the agency's own staff, is irrelevant since the agency may not weigh competing evidence. (*See Rominger v County of Colusa* (2014) 229 Cal.App.4th 690; *City of Carmel-by-the-Sea, supra*, at p. 249 [conflicting opinions by multiple experts on definition and extent of wetlands]; *Brentwood Ass'n for No Drilling, supra,*134 Cal.App.3d at p. 504 [conflicting expert testimony about impacts of exploratory oil well project].)

C. The Negative Declaration fails to assess groundwater impacts caused by permitting residential development within the former Fort Ord.

The discussion of water supply in Section 5.19 of the Negative Declaration states that the City has "negligible" water to allocate to new uses in the City within the MPWMD allocation in the Cal-Am service area. (Neg. Dec, p. 52.) The discussion states that the City has "an allocation of water assigned for redevelopment of the former Fort Ord area of the City within the MCWD [Marina Coast Water District] jurisdiction." (*Id*.)

The discussion of hydrology and water quality in Section 5.10 of the Negative Declaration concludes that the Housing Element would have "no impact" on hydrology and water quality because it is "strictly a policy document" that identifies "potential sites for development and establishes policies and programs to meet the RHNA." (Neg. Dec., p. 40.) The discussion also argues that the Housing Element would have no impacts because future development proposals would be environmentally reviewed. (Ibid.)

The discussion of land use and planning in Section 5.11 references the 1998 adoption of the Fort Ord Reuse Authority Development Resource Management Plan (DRMP) to ensure that development of Fort Ord would be restrained to "available resources and service constraints, including water and transportation." (Neg. Dec., p. 41). Section 5.11 mentions that FORA anticipated that development would use a maximum of 6,600 afy. The checklist for section 5.11 cites, but does not discuss, the 1997 Fort Ord Reuse Plan and EIR.

The discussion of cumulative impacts in Section 5.21 makes no reference to cumulative water supply impacts.

In fact, nothing in sections 5.19, 5.10, 5.11, or 5.21 provides any discussion of the impacts of using any portion of the 6,600 afy of water that FORA has allocated to the Fort Ord land use jurisdictions. Although Section 5.19 alludes to supply *entitlements*, the question whether a project has an entitlement is distinct from the question whether using that entitlement will cause significant *impacts*. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 434 ["The ultimate question under CEQA, moreover, is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable *impacts* of supplying water to the project"], emphasis in original.) The Negative Declaration is devoid of any discussion of the *impacts* of supplying groundwater, which must be evaluated.

D. The City must consider the environmental impacts of water use *before* adopting the Housing Element.

The contention in Sections 5.10 and 5.21 that the City may defer the consideration of the environmental impacts which the City's adoption of the Housing Element causes, or to which it contributes, is incorrect. General Plans and their elements represent critical decisions as to future land use, and an agency must assess the foreseeable consequences of these decisions. When an agency adopts a plan that will permit growth and development, it must actually evaluate the impacts that can be anticipated at that time, regardless of future tiers of review. (*Koster v. County of San Joaquin* (1996) 47 Cal.App.4th 29, 39-40; *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.) An agency may not evade its responsibility to provide meaningful information and analysis simply because it is undertaking a first tier of environmental review and may conduct future review at the project level. (*Vineyard Area Citizens for Responsible Growth, Inc., supra,* 40 Cal.4th at 431.)

Furthermore, if housing is subsequently approved through ministerial review, e.g., as Accessory Dwelling Units under AB 2299, there would be no future CEQA review. (Gov. Code, § 65852.6 [mandating ministerial review of certain ADUs]; Public Resources Code, § 21080(b)(1) [CEQA does not apply to ministerial projects].)

Indeed, a substantive review of resource impacts is essential at the first tier of review because that is when the cumulative effects are most likely to be evident. Here, the adoption of the Housing Element as proposed would result in a commitment to the use of a purported allocation of a groundwater supply from the Monterey Subbasin of the Salinas Valley Groundwater Basin instead of the use of other water supplies, such as the supplies that are planned to be available in the MPWMD/Cal-Am service area in the near future. The commitment to that purported groundwater supply requires environmental review of the use of that supply. The Negative Declaration does not provide this review.

E. An EIR is required because permitting residential development within the former Fort Ord would cause significant impacts to groundwater resources and would make a considerable contribution to significant cumulative impacts to groundwater resources.

The Housing Element and the Negative Declaration are both premised on the assumption that water is available to support residential development in the former Fort Ord but not in the Cal-Am/MPWMD service area. As discussed below, it is not true that there is or will be no water supply in the Cal-Am/MPWMD service area during the RHNA Cycle. Furthermore, as discussed in the next section below, it is not true that there will necessarily be a water supply entitlement for Del Rey Oaks development within the former Fort Ord after FORA sunsets in 2020.

However, regardless of the status or the certainty of the water supply entitlements inside and outside Fort Ord, the attached letters from hydrologist Timothy Parker provide substantial evidence that the use of the purported groundwater entitlement inside Fort Ord would cause significant impacts to groundwater resources and would make a considerable contribution to significant cumulative impacts to groundwater resources.

The proposed Housing Element would require the City to re-designate and rezone land in order to permit 86 units of residential development that would require a water supply of 23 acre-feet/year. Mr. Parker explains that the use of this water would cause or contribute to significant impacts to the groundwater resource, including significant cumulative impacts caused by the combined over-pumping from past, present, and forseeable future projects. These significant impacts include the ongoing overdraft of the 180-Foot and 400-Foot Aquifers, the depletion of the Deep Aquifers, the inducement of additional seawater intrusion in the 180-Foot and 400-Foot Aquifers, and the possible inducement of seawater intrusion into the Deep Aquifers.

Mr. Parker is Professional Geologist, a Certified Engineering Geologist, and a Certified Hydrogeologist, with over 28 years of geologic and hydrologic professional experience. He is familiar with the Monterey County groundwater conditions and his opinion is supported by facts from his review of current and past studies of the local conditions. Accordingly, his expert opinion with regard to significant impacts is substantial evidence. (14 CCR, § 15384(b).)

In sum, the City must prepare an EIR for the proposed Housing Element because there is substantial evidence that the project would cause significant impacts to groundwater resources and would make a considerable contribution to significant cumulative impacts to groundwater resources.

F. The City may not rely on the 6,600 acre-feet/year paper water that FORA, MCWD, and the land use jurisdictions have mistakenly assumed is a permanent supply.

Not only does the Negative Declaration fail to discuss or disclose the impacts from using groundwater to support residential uses in the former Fort Ord, it also misrepresents the availability of a long-term, reliable groundwater supply forFort ord development.

The Negative Declaration alludes to an allocation to Fort Ord member jurisdictions of portions of a 6,600 acre-feet/year ("afy") water supply. The Housing Element and the Negative Declaration apparently assume that the City will be entitled to rely indefinitely on its allocation of a portion of the 6,600 afy supply. However, for the reasons set out in LandWatch's February 26, 2019 letter to the Army, neither the 1993

agreement between the Army and MCWRA, nor any subsequent assignment of the Army's interest in that agreement, created a "water right," much less a permanent right to pump groundwater to support Fort Ord development regardless of impact on the aquifer.[1]

In summary, the facts are as follows. In a 1993 agreement, the Monterey County Water Resources Agency ("MCWRA") agreed to permit the Army to pump up to 6,600 acre-feet/year ("afy") of groundwater from Fort Ord wells in exchange for the Army's $7.4 million payment toward a replacement water supply project of at least 6,600 afy. In 2001, the Army assigned its interest in Fort Ord groundwater production to FORA and MCWD, reserving 1,749 afy for its own use. Since then, based on that assignment, the Fort Ord Reuse Authority ("FORA"), Marina Coast Water District, and the local land use jurisdictions that are members of FORA have assumed that they may pump up to 6,600 afy from the former Fort Ord indefinitely to support Army operations and civilian reuse, regardless of the environmental impact of this pumping. However, this assumption is contradicted by the clear evidence that the right to pump groundwater for Fort Ord was limited in time and that a replacement water supply was required to support civilian reuse of Fort Ord.

Recognizing that existing pumping was contributing to seawater intrusion, the 1993 agreement provides that MCWRA would develop that replacement water supply and that all groundwater pumping in Fort Ord must cease when the replacement water supply project is completed. The 1993 agreement expressly anticipates completion of the replacement water supply by 1999. Twenty-five years later, no agency has provided the replacement supply.

The Army's 1993 and 1996 environmental reviews of Fort Ord disposal and reuse expressly assume that MCWRA's agreement to permit the Army to pump up to 6,600 afy was a "short-term" agreement and that no pumping would be permitted if seawater intrusion continued. The Army's environmental reviews provide that civilian reuse of Fort Ord would require a replacement water supply. The 1993 EIS and the 1996 SEIS identified a number of replacement water supply projects then under discussion, including desalination and various surface water transfers. Provision of one of these replacement water supplies was identified as "non-Army responsibility" mitigation, to which the local agencies comprising the Fort Ord Working Group had committed themselves. Again, the 6,600 afy replacement water supply has not been implemented.

[1] John Farrow, letter to Colonel Gregory Ford, February 26, 2019.

G. Even if the City's allocation of a portion of the 6,600 afy paper water supply had created some right to pump groundwater when FORA *exists,* the City may not assume that it would remain entitled to some portion of that paper water supply after FORA *sunsets* in 2020.

Not only is the indefinite-term 6,600 afy paper water supply illusory, so too is the City's continuing right to some portion of it. As LandWatch has previously explained in comments on a proposal by Marina Coast Water District to annex portions of Fort Ord, the water supply allocations made by FORA will expire when FORA sunsets on June 30, 2020.[2] FORA is required to dissolve itself by June 30, 2020. (Gov. Code, § 67700(a).)

MCWD is currently subordinate to FORA in critical decision-making regarding water supply under the Water/Wastewater Facilities Agreement between FORA and MCWD.[3] Thus, FORA, not MCWD, is authorized to obtain water extraction capacity rights.[4] And FORA, not MCWD, has decided to sub-allocate 6,600 afy of its presumed capacity rights to its member agencies.[5] And, FORA, not MCWD, has primary responsibility to implement the policies and mitigation contained in the Fort Ord Reuse Plan.

The 1998 Water/Wastewater Facilities Agreement will no longer be in effect after FORA sunsets.[6] Thus, after FORA is dissolved, and in the absence of another binding plan addressing water supply issues, MCWD, as a County Water District, would assume plenary authority over the water use and allocation that is currently constrained by FORA. For example, MCWD would have essentially unfettered responsibility and authority to establish rules and regulations for water distribution. (Gov. Code, § 31024.) MCWD would have also have unfettered responsibility and authority to restrict water use in accordance with a threatened or existing water shortage. (Gov. Code, §§ 31026, 31029.1, 31035.1; Water Code § 350.) In short, MCWD need not honor any prior "allocation."

FORA has adopted a Transition Plan, which purports to "assign" to MCWD, effective on dissolution of FORA, "FORA's rights of enforcement under the original Implementation Agreements, to the extent they survive post-dissolution, regarding water

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[2] John Farrow, letter to Marina Coast Water District Board of Directors, February 19, 2018.

[3] MCWD/FORA Water/Wastewater Facilities Agreement, March 13, 1998, Articles 4.1, 5.1.1, 5.2.

[4] *Id.*, Article 3.4.1.

[5] FORA, Development Resources Management Plan (DRMP), section 3.11.5.4 and Table 3.11-2, available at http://www.fora.org/Reports/DevResourcePlan.pdf.

[6] Water/Wastewater Facilities Agreement, March 13, 1998, Article 9.

allocations." [7] However, the original Implementation Agreements between the land use jurisdictions and FORA will not survive post-dissolution, which is in part why the Transition Plan calls for the land use jurisdictions to negotiate "Transition Plan Implementing Agreements" to address such matters as the allocation of water supply. FORA's Transition Plan has not been implemented either by binding directives by LAFCO or by the proposed Transition Plan Implementing Agreements, which have yet to be adopted. Thus, after June 30, 2020, the City will have no enforceable claim on any water supply to serve development in the former Fort Ord.

In sum, the City's allocation of a portion of the 6,600 afy was always just paper water. But with the dissolution of FORA, that allocation is even more illusory, because there is no longer any actual agreement that would bind MCWD to supply a particular amount of water to the City.

II. The proposed Housing Element is inconsistent with the General Plan and with the Fort Ord Reuse Plan.

A. The proposed Housing Element is inconsistent with the General Plan.

The claim in the Housing Element that it is consistent with the General Plan is not correct. (Housing Element, p. 1-2.) The Housing Element is inconsistent with the existing General Plan because it would commit the City to permit residential use in Sites 1 and 1a, even though those Sites are currently designated for commercial use in the General Plan's Land Use Element. The Del Rey Oaks General Plan designates both Site 1 and 1a as GC(C-1-V), "General Commercial-Visitor." (General Plan, Figure 2, Land Use Map.) The General Plan identifies the land uses for these two parcels as Conference Center, Golf Course, Retail (Specialty Shops), Fitness Center, Office Park, and Corporate Office Center. (General Plan, Figure 2A and Table 1.) *No residential uses are designated for Sites 1 and 1a.*

Furthermore, Land Use Element Goal 6 requires the City to "[a]nnex the properties on Fort Ord to provide additional sites for economic development with potential revenue generating land uses." (General Plan, p. 31.) Residential use is neither economic development nor a revenue generating land use, and it is therefore inconsistent with Goal 6.

Because a General Plan must be internally consistent, the City cannot legally adopt the Housing Element committing the City to permit residential uses in Sites 1 and 1a without also amending the Land Use Element in the General Plan. (Gov. Code, § 65300.5; *Denham, LLC v. City of Richmond* (Cal. Ct. App., Oct. 25, 2019, No. A154759)

[7] FORA, Resolution No. 18-11, Dec. 19, 2018, available at https://fora.org/Reports/Resolutions/2018/18-11.pdf.

2019 WL 5493479, at *3 [general plan is internally inconsistent when "different elements of the general plan describe incompatible uses for the same property"].) However, the City does not propose to amend the Land Use Element at the same time that it adopts the Housing Element, because it claims incorrectly that the Housing element is consistent with the Land Use Element. (Housing Element, p. 1-2.)

B. The proposed Housing Element is inconsistent with the Fort Ord Reuse Plan.

The claim in the Housing Element that it is consistent with the Fort Ord Reuse Plan is not correct. (Housing Element, p. 1-2.) That claim is based on the arguments that (1) the Fort Ord Reuse Authority found the General Plan to be consistent with the Fort Ord Reuse Plan, and (2) the Housing Element is consistent with the General Plan. The second premise is false, because, as explained above, the Housing Element's commitment to residential land use on Sties 1 and 1a is inconsistent with the General Plan Land Use Element land use designations and its Policy 6.

Furthermore, the Fort Ord Reuse plan itself does not provide for any residential development in Sites 1 and 1a. Sites 1 and 1a are located in the "South Gate Planning Area" for the Fort Ord Reuse Plan.[8] The designated land uses in the South Gate Planning Area include Visitor-Serving/Commercial Recreational Land Use (hotel and golf course), Retail and Services, an Office Park/R&D District, and augmentation of the Regional Park District. The South Gate Planning Area land uses are consistent with the Del Rey Oaks General Plan. However, just like the General Plan, the South Gate Planning Area land uses do *not* include any residential use.

The City is required to submit General Plan amendments to the Fort Ord Reuse Agency for a consistency determination. (Gov. Code, §§ 67675.2, 67675.3.) The Fort Ord Reuse Agency could not find the proposed Housing Element consistent with the Fort Ord Reuse Plan.

III. The City can and should consider alternative locations for RHNA residential development in Sites 2, 3, and 4, which are not in the former Fort Ord.

In preparing an EIR, the City will have to consider a "reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." (14 CCR, § 15126.6(a).) Fortunately, there are such alternatives. Indeed, it is possible that the adoption of one or more of these alternatives would obviate

[8] Fort Ord Reuse Authority, Fort Ord Reuse Plan, pp. 182-183, available at https://www.fora.org/Reports/BRP/BRP_v1_ContextAndFramework_1997.pdf.

the need for an EIR because it may not cause or contribute to any significant environmental impacts.

A. Acreage sufficient to site RHNA units is available within the City without using sites within the former Fort Ord.

Sites 2 and 3 described in Chapter 3 of the Housing Element would provide 40.5 acres of development space, which would be more than enough to develop the 86 RHNA units. For example, the multifamily units suitable for the 70 Low Income and Very Low Income units could be sited on as little as 4.6 acres if they were developed at the intensity of 15 units per acre. The remaining 16 moderate and above moderate income units could be developed on another 4 acres at a density of 4 units per acre.

In addition, the Housing element acknowledges that Site 4 would accommodate 185 Accessory Dwelling Units, which would be more than enough to accommodate the 70 Low Income and Very Low Income unit portion of the RHNA.

Furthermore, the conclusion that there are only 185 sites that could accommodate ADUs assumes that the City would not relax its current zoning requirement that a lot be at least 8,000 square feet to support an ADU. However, the City can and should relax this requirement, particularly in light of state legislation encouraging cities to rely on ADUs to meet RHNA mandates. (*See, e.g.,* SB 1069 (Chapter 720, Stats. 2016) [reducing parking requirements, fees, fire sprinkler requirements; requiring ministerial approval for ADUs within existing space; prohibiting ordinances that ban ADUs]; AB 2299 (Chapter 735, Stats. 2016) [requiring ministerial approval under specified conditions]; AB 2406 (Chapter 755, Stats. 2016) [flexibility for junior ADUs]). For example, AB 2406 specifically permits a city to count "junior ADUs" (ADUs under 500 sq. ft.) toward meeting its RHNA.

Indeed, the City should examine recent legislation regarding ADUs to determine whether the City's ordinances remain compliant with state law that now prohibits certain conditions and approval processes for ADUs. For example, it is not clear that a use permit can legally be required for all ADU units in an R-1 or R-2 zone in light of new law requiring ministerial approvals of ADUs meeting certain conditions. (*Compare* DRO Code, §§ 17.08.100, 17.12.20(1) to Gov. Code § 65852.6 [AB 2299, Chap. 735, Stats. 2016].).

B. Water will be available by 2021, or sooner, for residential development within the Cal-Am service area, outside Fort Ord, e.g., for Sites 2, 2, and 4.

The only apparent constraint identified in the Housing Element for use of Sites 2, 3, and 4 rather than Sites 1 and 1a to meet RHNA zoning requirements is the claimed

lack of water supplies. However, water would in fact be available for residential development in Sites 2, 3, and 4.

Water supplies for future development will be available when the Monterey Peninsula Water Supply Project is completed, which is currently committed for 2021. The California Public Utilities Commission approved a Certificate of Public Convenience and Necessity for California-American Water Company's ("Cal-Am's") Monterey Peninsula Water Supply Project in Decision D.18-09-17 and denied a rehearing of that decision in an order issued February 5, 2019.[9] That decision authorizes and commits Cal-Am to develop a water supply by year-end 2021, in time to meet the requirements of the SWRCB's Cease and Desist Order 2009-0060 ("CDO").[10] The moratorium on new water connections required by the CDO and authorized by the CPUC decision D.11-03-048, issued in A.10-05-020, will then end, and new hookups will be permitted.[11]

Although certain parties have challenged the issuance of the Coastal Development Permit needed for the MPWSP before the California Coastal Commission, that challenge is premised on the assumption that the Coastal Commission will find that an alternative project will be available to meet foreseeable demand by 2021.[12] There is no reasonable expectation that the Coastal Commission would deny the needed Coastal Development Permit without the availability of an alternative water supply available by 2021.

In short, the City can expect to see the current moratorium on new hookups within the Cal-Am service area end by December 2021.

Furthermore, the Monterey Peninsula Water Management District is currently seeking to make residential water supplies available within the Cal-Am service area *prior* to 2021, despite the moratorium. At is August 2019 meeting, the Board of MPWMD discussed actions it might take to make available water to the jurisdictions for their housing needs during the remaining years the Cease and Desist Order and then directed

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[9] CPUC, Order Modifying Decision (D.) 18-09-017, And Denying Rehearing Of Decision, As Modified, Issued Feb. 5, 2019, available at http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M262/K004/262004679.PDF.

[10]CPUC, Decision D12-04-019, Findings of Fact, 24, 25, p. 169, available at http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M229/K424/229424336.PDF.

[11] CPUC, Decision D.11-03-040, p, 50, available at http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/134272.PDF.

[12] California Coastal Commission, Staff Report: Recommendation on Appeal, Appeal Bo. A-3-19-0034, pp. 2-3, 80 ["PWM Expansion has a projected construction schedule similar to Cal-Am's, in that both anticipate being online and able to provide water at or near December 2021, which is the date by which Cal-Am is required to end its overpumping of the Carmel River], available at https://documents.coastal.ca.gov/reports/2019/11/Th8a_9a/Th8a_9a-11-2019%20staff%20report.pdf.

its staff to develop detailed proposals.[13] The MPWMD has identified several proposals that could provide water for housing prior to 2021. For example:

- The District currently has 9 af in the District Reserve that it could allocate to housing at the discretion of the District Board.

- The District could create new water Allocation for housing from accumulated conservation savings. The District has attained approximately 3,000 af of demand reductions since the CDO was enacted, and it could recognize those savings as a Public Water Credit allocable to the Jurisdictions for use.

- The District could modify its Rules and Regulations to provide that Water Use Credits could be placed in the District Reserve for reallocation to Jurisdictions.

- The District could seek voluntary forfeiture of exiting Water Use Credits that are outstanding and would expire between 2020 and 2029.

- The District could ease the transfer of Water Use Credits from Non-Residential use to Residential use, with or without financial incentives.

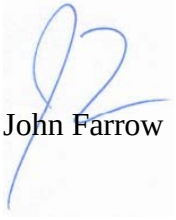
- The District could develop a conservation offset program, as already envisioned in District Rule 24(E)(6)(k), which would allow a developer to obtain water for a project by implementing conservation measures elsewhere in the District.

Furthermore, the MPWMD staff report proposes that the Water Demand Committee determine how to ensure that any additional water supply be used specifically for *affordable* housing rather than just for housing in general.

Although the Board has not yet acted on these proposals, its direction to staff to develop these detailed proposals indicates its intention to make water available for housing, especially affordable housing, before 2021.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



John Farrow

JHF:hs

[13] MPWMD Water Demand Committee, Discussion Items, Oct. 31, 2019.

Exhibits:

Documents referenced above without URLs:

1. Timothy Parker, letter to John Farrow, Nov. 14, 2019.
2. John Farrow, letter to Colonel Gregory Ford, February 26, 2019.
3. John Farrow, letter to Marina Coast Water District Board of Directors, February 19, 2018.
4. MCWD/FORA Water/Wastewater Facilities Agreement, March 13, 1998
5. MPWMD Water Demand Committee, Discussion Items, Oct. 31, 2019.

Documents referenced in Timothy Parker, letter to John Farrow, Nov. 15, 2019 without URLs.

6. WRIME, Deep Aquifer Investigative Study, May 2003
7. MCWD, 2018 Well Production Summary
8. Timothy K. Parker, Technical Memorandum to John H. Farrow, October 8, 2016
9. Timothy K. Parker, letter to John H. Farrow, February 15, 2018.
10. MCWD v. County of Monterey (Bill Armstrong et al., Real Parties in Interest), Petition for Writ of Mandate and Complaint for Injunctive Relief, March 5, 2018.

EXHIBIT 1

Technical Memorandum November 14, 2019

To: John Farrow
M.R. Wolfe & Associates, P.C
555 Sutter Street, Suite 405
San Francisco, CA 94102

From: Timothy K. Parker, PG, CEG, CHG, Parker Groundwater

Subject: Groundwater impacts from increased pumping to support Del Rey Oaks housing development in the Ord Community

At your request, I have reviewed the Draft Initial Study/Negative Declaration for the City of Del Rey Oaks Housing Element (DRO Negative Declaration) together with the documents cited below. Del Rey Oaks is proposing to adopt a housing program that would call for rezoning of land in the former Fort Ord to be used for up to 86 housing units.

This letter reiterates and updates the conclusions set out in my October 8, 2016 memorandum regarding the proposal to increase groundwater pumping to support the Monterey Downs project in the Fort Ord community and in my February 15, 2018 letter regarding the proposal to increase groundwater pumping through annexation of additional areas within Fort Ord into the service area for Marina Coast Water District (MCWD). Consistent with my earlier conclusions and as updated in the discussion below, increased pumping to support the Del Rey Oaks housing development in the Ord Community would aggravate existing seawater intrusion and further deplete the Deep Aquifers.

I am a California Professional Geologist (License #5584), Certified Engineering Geologist (License # EG 1926), and Certified Hydrogeologist (License #HG 12), with over 28 years of geologic and hydrologic professional experience. I served as a member of the Technical Advisory Committee to the Monterey County Water Resources Agency (MCWRA) in connection with its study of the Salinas Valley Groundwater Basin that is mandated by Policy PS 3.1 of the 2010 Monterey County General Plan. The purpose of that study is to evaluate historic data and trends in seawater intrusion and groundwater levels in the Salinas Valley Groundwater Basin, to evaluate the likely future groundwater demand, to determine whether groundwater level declines and seawater intrusion are likely to continue through 2030, and to make recommendations for action. This study has not been concluded, but a preliminary report was released in January 2015 by the prime consultant for the PS-3.1 study.[1] My Resume and Project Experience are attached.

[1] MCWRA, State of the Salinas River Groundwater Basin, January, 2015, available at

1. The affected subbasins and management subarea

The water system that MCWD uses to supply groundwater for Marina and Fort Ord development relies on an intertied set of wells in the 400-Foot Aquifer and the Deep Aquifers within what is now termed the Monterey Subbasin.[2] The California DWR's Bulletin 118, which defines basin and subbasin boundaries, was updated in 2018 to divide the areas previously identified as the Seaside Subbasin into two separate subbasins, the Seaside Subbasin and the Monterey Subbasin.[3] The reasons for this revision is that hydrologic studies of the Marina and Seaside areas have shown that the northern portion of the area formerly designated as the Seaside Subbasin and now designated as the Monterey Subbasin is connected to the 180/400 Foot Aquifer Subbasin, while the southern portion is separate from the Salinas Valley due to a ridge in the water-bearing formations.[4]

Monterey County Water Resources Agency (MCWRA) designates management subareas in the Salinas Valley Groundwater Basin, the boundaries of which are not identical to the DWR subbasin boundaries. The MCWRA-designated Pressure Subarea includes the DWR-defined 180/400-Foot Aquifer Subbasin and most of the DWR-defined Monterey Subbasin and includes part of the DWR-defined Seaside Subbasin.[5]

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https://digitalcommons.csumb.edu/cgi/viewcontent.cgi?article=1020&context=hornbeck_cgb_6_a.

[2] Marina Coast Water District, 2015 Urban Water Management Plan, June 6, 2016 (MCWD, 2015 UWMP), pp. 31-38,75 available at https://www.mcwd.org/docs/engr_files/MCWD_2015_UWMP_Final.pdf.; City of Seaside, Campus Town Specific Plan DEIR, p. 4.9-5, available at https://www.ci.seaside.ca.us/DocumentCenter/View/9742/Seaside-Campus-Town-Specific-Plan-DEIR-July-2019.

[3] Department of Water Resources, Basin Boundary Description, 3-004.10 Salinas Valley – Monterey, February 5, 2018, available at https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/B118-Basin-Boundary-Descriptions-2016/B118-Basin-Boundary-Description-2016---3_004_10.pdf; see also Department of Water Resources, California's Groundwater Bulletin 118 – Interim Update 2016, available at http://www.water.ca.gov/groundwater/bulletin118/docs/Bulletin_118_Interim_Update_2016.pdf.

[4] MCWD, 2015 UWMP, p. 34.

[5] Salinas Valley Groundwater Basin Groundwater Sustainability Agency (SVGBGSA), Draft 180/400-Foot Aquifer Subbasin GSP, October 1, 2019, pp. 5-15 and 5-28, available at https://svbgsa.org/wp-content/uploads/2019/10/4-Updated-Volume-2.pdf; see also MCWD, 2015 UWMP, p. 35; WRIME, Deep Aquifer Investigative Study, May 2003, p. 3-13.

MCWRA's 2016 State of the Salinas Valley Groundwater Basin reports basin hydrogeology, aquifer interactions, groundwater level trends and groundwater balance for the aquifers in the management subareas, including the 180-Foot Aquifer, the 400-Foot Aquifer, and the Deep Aquifers in the Pressure Subarea.[6] Because the 180-Foot Aquifer, the 400-Foot Aquifer, and the Deep Aquifers in the Pressure Subarea are shared by both the Monterey Subbasin and the 180/400-Foot Aquifer Subbasin, reported statistics for the Pressure Subarea are relevant to both Subbasins. In some instances, the aggregate data for the Pressure Subarea can be disaggregated as between the Monterey Subbasin and the 180/400-Foot Aquifer Subbasin. For example, the annual volume of seawater intrusion can be allocated between the Monterey Subbasin and the 180/400-Foot Aquifer Subbasin based on the relative length of their coastlines that are subject to seawater intrusion:

> The State of the Salinas River Groundwater Basin report estimated that approximately 11,000 acre-feet of seawater flows into the Pressure subarea every year. Previous estimates have ranged between 14,000 and 18,000 acre-feet per year (AF/yr.) of seawater intrusion (Brown and Caldwell, 2016). These seawater inflow estimates include portions of the Monterey Subbasin. The length of coastline subject to seawater intrusion is approximately 75% in the 180/400-Foot Aquifer Subbasin and therefore we estimate the flow into the 180/400-Foot Aquifer Subbasin is approximately 8,250 to 13,500 AF/yr.[7]

However, disaggregation of these statistics should not obscure the fact that the 180-Foot Aquifer, the 400-Foot Aquifer, and the Deep Aquifers are common to the Monterey Subbasin and the 180/400-Foot Aquifer Subbasin.

The previously designated "900-Foot Aquifer" or "Deep Aquifer," from which most of the pumping to support Fort Ord development is taken, is now understood to include at least two distinct aquifers:

> Taken together, the overall conclusion that can be derived from the collected data and the preliminary analysis is that the deep aquifers from which MCWD extracts its water supply is actually two separate aquifer systems. Existing geologic and water chemistry data suggest that MCWD Well Nos. 10 and 11 produce primarily from the Paso Robles Formation, whereas MCWD Well No. 12 produces from the Purisima Formation.[8]

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[6] MCWRA, State of the Salinas Valley Groundwater Basin.

[7] SVGBGSA, Draft 180/400-Foot Aquifer Subbasin GSP, October 1, 2019, p. 5-40.

[8] WRIME, Deep Aquifer Investigative Study, May 2013, p. 2-31; see also WRIME, p. 3-13; MCWD, 2015 UWMP, pp. 35, 37; MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, pp. 45-46, available at https://www.co.monterey.ca.us/home/showdocument?id=57394.

Accordingly the deeper aquifer system underlying the upper aquifers (the 180-Foot and 400-Foot aquifers) is now sometimes referred to as the Deep Aquifers.[9]

2. Increased pumping for new development in the Ord community would aggravate seawater intrusion in the upper aquifers and further deplete the Deep Aquifers.

The proposal to add up to 86 units of additional housing to the Ord Community is based on the premise that MCWD would supply water to support that housing. According to the Negative Declaration, the revised Program 1A of the Housing element calls for 16 units of moderate and above-moderate income housing and 70 units of low and very-low income housing in Fort Ord "where water is available for development."[10]

Assuming that the moderate and above-moderate housing units are single family units, and that the low and very-low income units are multi-family units, the units would require 0.33 afy and 0.25 afy per housing unit respectively.[11] Based on these demand factors, the 86 units of housing would require an additional 23 afy of water supply from MCWD. Residential development on a per-acre basis is significantly more water-intensive than commercial or industrial development.

As noted, MCWD's groundwater pumping to service Fort Ord and Marina comes from its wells in the Deep Aquifer and the 400-Foot Aquifer.[12] Wells 10, 11, 12, and 34 draw from the Deep Aquifers. Wells 29, 30, 31, and "WG" (the Watkins Gate well, aka well 35) draw from the upper aquifers. In 2018, MCWD pumped 2,508 af from the Deep Aquifer wells and 895 af from the upper aquifer wells.[13] Thus, about 74% of MCWD pumping comes from the Deep Aquifers and about 26% comes from the upper aquifers.

The impact of groundwater pumping on the aquifers includes cumulative effects from past, present and foreseeable future pumping. MCWRA has documented that Deep Aquifer

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[9] MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, pp. 45-46.

[10] DRO Negative Declaration, Appendix A, Attachment, revised Chapter 7.0, available at https://www.delreyoaks.org/sites/default/files/fileattachments/city_hall/page/2692/city_of_del_rey_oaks_housing_element_10_23_2019.pdf.

[11] MCWD, 2015 UWMP, p. 18.

[12] MCWD, 2015 UWMP, pp. 9 [Figure 2.2], 45.

[13] MCWD, 2018 Well Production Summary.

pumping by all users, including MCWD, was 8,901 afy in 2016.[14] As discussed below, this pumping directly depletes the Deep Aquifers because there is no known recharge source other than leakage from the upper aquifers. Cumulative pumping from the Pressure Subarea, primarily from the 400-Foot Aquifer and 180-Foot Aquifer, averages 110,000 afy, which results in an ongoing annual overdraft of 2,000 afy.[15] Cumulative pumping is projected to increase. MCWD projects that its water demand for Marina and Fort Ord will increase from 4,174 afy in 2015 to 12,197 afy in 2035.[16] As discussed below, despite the 2018 moratorium on new wells in the Deep Aquifers, it is foreseeable that increased Deep Aquifer pumping will occur from wells that have been permitted prior to 2018 and from future "replacement wells" that may be permitted under the moratorium ordinance. Any increases in groundwater pumping must be assessed with reference to its contribution to this cumulative groundwater pumping to the Deep Aquifers and to the upper aquifers of the Pressure Subarea.

In summary, the conclusions in my October 8, 2016 memorandum and in my February 15, 2018 letter regarding proposals to increase groundwater pumping to support Ord Community development remain valid.[17] First, seawater intrusion into the 180-Foot and 400-Foot aquifers continues in the Pressure Subarea due to overdraft conditions, despite the groundwater management projects that are intended to halt it. Additional pumping of either the 180-Foot Aquifer or the 400-Foot Aquifer will directly induce additional seawater intrusion.

Second, additional pumping of the Deep Aquifers will deplete them and contribute to seawater intrusion of the 180-Foot and 400-Foot aquifers. This is because the Deep Aquifers have no known source of recharge other than induced leakage from the upper aquifers, and that leakage induces seawater intrusion into the upper aquifers. The leakage from the upper aquifers also threatens to salinate the Deep Aquifers themselves.

Consistent with the conclusions in my earlier letters, the incremental water demand for 86 units of additional housing would contribute considerably to the cumulative seawater intrusion of the upper aquifers and the depletion of the Deep Aquifers. The discussion

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[14] MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, p. 52.

[15] MCWRA, State of the Salinas Valley Groundwater Basin, p. ES-11.

[16] MCWD, 2015 UWMP, p. 22.

[17] Timothy K. Parker, Technical Memorandum to John H. Farrow, October 8, 2016; Timothy K. Parker, letter to John H. Farrow, February 15, 2018.

below summarizes these conclusions and notes additional information that has become available since my previous letters.

a. Additional pumping from the Deep Aquifers would further deplete the Deep Aquifers and induce additional seawater intrusion.

According to MCWD's 2015 Urban Water Management Plan, "[o]ther than MCWD, only a small number of wells tap the deep aquifer . . .."[18] MCWD's 2015 UWMP claims that as of 2015 "MCWD is currently the only significant user of the Deep Aquifer . . .."[19] However, contrary to MCWD's UWMP, there are in fact other users of the Deep Aquifers and there has been a substantial increase in pumping from the Deep Aquifers as new wells have been installed to replace the seawater intruded wells in the upper aquifers.[20] Since 1995, new wells in the Deep Aquifer have been drilled at the rate of more than one per year, and there are now more than 40 wells in the Deep Aquifers.[21] Deep Aquifer extractions increased from 2,151 afy in 1999 to 8,901 afy in 2016.[22]

Well drilling in the Deep Aquifers continues. For example, MCWD brought a lawsuit against the County of Monterey in March 2018 challenging the September 2017 drilling permit for a Deep Aquifer well with the capacity to pump another 4,000 afy.[23] And although the County enacted a moratorium on new wells in the Deep Aquifers in May 2018, that moratorium exempts both municipal supply wells and so-called "replacement wells," i.e., wells drilled to replace the water supply previously obtained from wells in the upper aquifers that have failed due to seawater intrusion.[24]

The Deep Aquifers are not a sustainable water source. MCWD acknowledges that the Deep Aquifer water "is not of recent origin" and that carbon dating reveals it to be "between 22,000 and 31,000 years old."[25] In fact, the only known source of recharge to the Deep

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[18] MCWD, 2015 UWMP, p. 31.

[19] Ibid.

[20] MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, p. 48.

[21] Ibid.

[22] Id., p. 52.

[23] MCWD v. County of Monterey (Bill Armstrong et al., Real Parties in Interest), Petition for Writ of Mandate and Complaint for Injunctive Relief, March 5, 2018, paragraph 2.

[24] Monterey County Urgency Ordinance # 5302, available at https://www.co.monterey.ca.us/government/departments-a-h/health/environmental-health/wells/interim-urgency-ordinance-5302.

[25] MCWD, 2015 UWMP, p. 37.

Aquifers is "leakage from the overlying aquifer system, i.e. the Pressure 180-Foot Aquifer and Pressure 400-Foot Aquifer."[26]

The leakage from the upper aquifers caused by increased pumping from the Deep Aquifers induces seawater intrusion in the upper aquifers. The MCWD UWMP acknowledges this impact:

> Another concern is that the Deep Aquifer may be connected to, and affect seawater intrusion in, the upper aquifers. Preliminary findings regarding the Deep Aquifer in the Ord Community area indicate that there is some vertical connectivity between the Deep Aquifer and the overlying aquifers. According to the Deep Aquifer Investigative Study, WRIME, May 2003, increased pumping of the Deep Aquifer would be expected to increase the rate of seawater intrusion in the middle and upper aquifers, but to a lesser extent than if the increased pumping occurred in the middle or upper aquifers. In that report, WRIME modeled the effect of increasing groundwater pumping from the Deep Aquifer by two to five times the baseline rate of 4,800 afy. The model predicted that, in the absence of other actions to control seawater intrusion, the landward flow of groundwater would increase as a result.[27]

The 2003 WRIME study cited by MCWD concluded that increasing the baseline rate of extraction would induce seawater intrusion. The 2003 WRIME study concluded that annual MCWD production from Deep Aquifer wells had averaged about 2,000 afy since 1990.[28] The WRIME analysis of the effects of increased pumping over baseline conditions assumed that baseline pumping was 2,400 afy.[29, 30]

Using the Salinas Valley Integrated Groundwater and Surface water Model (SVGISM) modified to reflect the best understanding of the structure of the Deep Aquifers, WRIME evaluated the effects of increased pumping of the Deep Aquifers on the 180-Foot Aquifer,

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[26] MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, p. 52.

[27] MCWD, 2015 UWMP, p. 50.

[28] WRIME, Deep Aquifer Investigative Study, May 2013, pp. 2-14, 2-15.

[29] Id., pp. 3-60, 4-1; 4-11.

[30] MCWD's 2015 UWMP misstates the baseline conditions in the WRIME analysis as follows: "In that report, WRIME modeled the effect of increasing groundwater pumping from the Deep Aquifer by two to five times the baseline rate of 4,800 afy." (MCWD, 2015 UWMP, p. 50.) As noted, the baseline rate in the WRIME study was 2,400 afy.

the 400-Foot Aquifer, the upper aquifer of the Deep Aquifers, and the lower aquifer of the Deep Aquifers, which WRIME termed Aquifers 1, 2, 3, and 4.

WRIME concluded that increasing Deep Aquifer pumping from 2,400 afy to 8,000 afy (the Alternative 2 analysis) would reduce groundwater levels at coastal monitoring locations in all four aquifers by 4 to 7 feet and would induce additional seawater intrusion (coastal groundwater flows).[31] WRIME found that increasing Deep Aquifer pumping from 2,400 to 8,000 afy would induce additional vertical flows between the aquifers, including an additional flow of 4,152 afy from the 400-Foot Aquifer to the upper Deep Aquifer.[32]

As noted, the level of Deep Aquifer pumping at 8,901 afy, now exceeds the 8,000 afy level modeled by WRIME.[33] Thus, the available analysis indicates that the current level of Deep Aquifer pumping is contributing to seawater intrusion. Any further increase in Deep Aquifer Pumping will further induce seawater intrusion.

Because the Deep Aquifer is not known to be a sustainable aquifer with ongoing natural recharge, the Monterey County Water Resources Agency imposed a moratorium in 2018 on new wells in the Deep Aquifer pending a study to determine whether the Deep Aquifer has any sustainable yield.[34] Although the moratorium exempts municipal supply wells and certain "replacement wells," such wells have the same effect on aquifer depletion and seawater intrusion as other wells.

In sum, the available evidence indicates that use of the Deep Aquifers amounts to mining an ancient and non-sustainable resource, which will deplete that resource. Furthermore, increased pumping from the Deep Aquifers will also induce further seawater intrusion in the upper aquifers and will increase the risk that the Deep Aquifers will themselves become saline due to induced vertical leakage from the upper aquifers. Under the circumstances, the Del Rey Oaks Housing Element Negative Declaration should acknowledge that additional pumping from the Deep Aquifers to support 86 residential units would make a considerable contribution to the ongoing significant cumulative impacts from Deep Aquifer pumping.

b. Additional pumping from the upper aquifers would threaten existing MCWD wells, add to overdraft conditions, and induce additional seawater intrusion.

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[31] WRIME, Deep Aquifer Investigative Study, May 2013, p. 4-11, Tables 4.2 and 4.3.

[32] Id., Table 4.4 [Alternative 2, change in flow from Aquifer 2 to Aquifer 3].

[33] MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, p. 52.

[34] Monterey County Urgency Ordinance # 5302.

As noted, about 24% of current MCWD pumping for Marina and Fort Ord comes from the aquifers above the Deep Aquifers. Any additional pumping for new development from these upper aquifers is problematic.

First, additional pumping to support Fort Ord development may not remain viable. MCWD's continued pumping from the 400-Foot Aquifer on Fort Ord is threatened by the rapid advance of seawater intrusion. MCWD and the Army have frequently had to replace wells in the 180-Foot and 400-Foot aquifers that have become unusably saline since 1960, drilling new wells farther inland or to the Deep Aquifers as the seawater intrusion front advances.[35] MCWRA's most recent mapping of the seawater intrusion front in 400-Foot Aquifer shows rapid advance of that front along Reservation Road in the vicinity of MCWD's only remaining upper aquifer wells, wells number 29, 30, 31 and 35.[36] There is no assurance that MCWD's remaining wells in the 400-Foot Aquifer will remain viable in the face of this rapid seawater intrusion.

Furthermore, any additional pumping from the upper aquifers will add to the existing overdraft conditions in the Pressure Subarea. MCWRA reports that overdraft in the Pressure Subarea has averaged 2,000 afy from 1944 to 2013.[37] This cumulative overdraft condition results in declining groundwater levels, which in turn cause seawater intrusion. Groundwater levels in the Pressure Subarea 400-Foot Aquifer continue to decline, especially along the coast.[38]

Coastal pumping, such as MCWD's pumping for Fort Ord and Marina, induces seawater intrusion more than the same amount of pumping from further inland. Thus, to halt the advance of seawater intrusion, the most recent hydrological studies have recommended that pumping be reduced in the coastal aquifers or that pumping be shifted further away from the coast.[39]

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[35] MCWD, 2015 UWMP, p. 45.

[36] Compare MCWD, 2015 UWMP, p. 9, Figure 2.2 [well maps] to MCWRA, Historic Seawater Intrusion Map, Pressure 400-Foot Aquifer, June 7, 2017 [seawater intrusion front], available at http://www.co.monterey.ca.us/home/showdocument?id=19378.

[37] MCWRA, State of the Salinas River Groundwater Basin, 2017, p. ES-11.

[38] MCWRA, presentation of Groundwater Level Contours And Seawater Intrusion Maps, July 13, 2017, available at http://www.co.monterey.ca.us/home/showdocument?id=31294.

[39] MCWRA, State of the Salinas River Groundwater Basin, 2017, pg. ES-16; Geoscience, Protective Elevations to Control Seawater Intrusion in the Salinas Valley, Nov. 19, 2013, pp. 1, 11, available at https://www.co.monterey.ca.us/home/showdocument?id=19014.

In sum, any additional pumping from MCWD's wells in the upper aquifers will exacerbate the existing overdraft, falling coastal groundwater levels, and seawater intrusion.

Finally, I understand that MCWRA agreed in 1993 that the Army could pump 6,600 afy to support Fort Ord use pending a new 6,600 afy potable water supply for Fort Ord. I understand that this 6,600 afy allocation has been sub-allocated to Fort Ord land use jurisdictions and to individual development projects, but that no new potable water supply for Fort Ord has been implemented. As I explained in my earlier letters, the real-world physical impacts to the aquifers is occurring, and will be aggravated by increased pumping, regardless of the availability of any portion of the 6,600 afy allocation. The right to pump groundwater is a distinct issue from the impacts from that pumping.

EXHIBIT 2

m | r | wolfe
& associates, p.c.
attorneys-at-law

February 26, 2019

By E-mail

Colonel Gregory Ford
Garrison Commander, Presidio of Monterey
United States Army
1759 Lewis Rd
Monterey, CA 93944
gregory.j.ford6.mil@mail.mil

Re: **Subsequent Environmental Impact Statement Required for Disposal of Army Interest in Fort Ord Groundwater**

Dear Colonel Ford:

On behalf of LandWatch Monterey County, I write to request that you ensure that the Army prepare a subsequent environmental impact statement ("SEIS") under the National Environmental Policy Act ("NEPA") before considering the disposal of any remaining Army interest in groundwater in the former Fort Ord area.

LandWatch understands that the Army has been asked to convey a portion of its purported interest in Fort Ord area groundwater to local agencies to facilitate civilian reuse of the base. NEPA mandates that the Army prepare an SEIS before taking such an action. Any additional pumping groundwater in the Fort Ord area would contribute to cumulative overdraft conditions and would induce seawater intrusion, which is clearly a significant impact.

In a 1993 agreement, the Monterey County Water Resources Agency ("MCWRA") agreed to permit the Army to pump up to 6,600 afy of groundwater from Fort Ord wells in exchange for the Army's $7.4 million payment toward a replacement water supply project of at least 6,600 afy. Recognizing that existing pumping was contributing to seawater intrusion, the 1993 agreement provides that MCWRA would develop that replacement water supply and that all groundwater pumping in Fort Ord must cease when the replacement water supply project is completed. The 1993 agreement expressly anticipates completion of the replacement water supply by 1999. Twenty-five years later, no agency has provided the replacement supply.

The Army's 1993 and 1996 environmental reviews of Fort Ord disposal and reuse expressly assume that MCWRA's agreement to permit the Army to pump up to 6,600 afy was a "short-term" agreement and that no pumping would be permitted if seawater intrusion continued. The Army's environmental reviews provide that civilian reuse of Fort Ord would require a replacement water supply. The 1993 EIS and the 1996 SEIS

identified a number of replacement water supply projects then under discussion, including desalination and various surface water transfers. Provision of one of these replacement water supplies was identified as "non-Army responsibility" mitigation, to which the local agencies comprising the Fort Ord Working Group had committed themselves. Again, the 6,600 afy replacement water supply has not been implemented.

In 2001, the Army assigned its interest in Fort Ord groundwater production to FORA and MCWD, reserving 1,749 afy for its own use. Since then, based on that assignment, the Fort Ord Reuse Authority ("FORA"), Marina Coast Water District ("MCWD"), and the local land use jurisdictions that are members of FORA have assumed that they may pump up to 6,600 afy from the former Fort Ord indefinitely to support Army operations and civilian reuse, regardless of the environmental impact of this pumping. Indeed, these agencies have assumed that their only obligation to provide a water supply is to build *additional* capacity when groundwater pumping for Fort Ord reaches the assumed indefinite supply level of 6,600 afy.

LandWatch does not believe that the 1993 agreement between the Army and MCWRA, or any subsequent assignment of the Army's interest in that agreement, created a "water right," much less a permanent right to pump groundwater regardless of impact on the aquifer. However, the purpose of this letter is not to address that question. The purpose of this letter is to advise the Army that it must prepare an SEIS before it takes any action that induces, or purports to permit, local agencies to increase their groundwater pumping, including any further assignment of its interests in the 1993 agreement.

An SEIS is required due to significant new circumstances and information, including

- the substantial and accelerating increase in seawater intrusion;
- the unforeseen failure of local agencies to implement the assumed replacement water supply;
- the unforeseen decision by local agencies to treat MCWRA's agreement to permit the short-term use of 6,600 afy as a permanent "water right;" and
- the imminent termination of FORA, which will end its management and allocation of groundwater, leaving MCWD with unfettered discretion as to groundwater pumping.

An SEIS is also required because any Army decision to assign an interest in groundwater pumping to support and induce long-term civilian development is a substantial change to the action the Army evaluated in its 1993 EIS and 1996 SEIS.

We discuss these points in more detail below.

I. Background

A. The 1993 Army/MCWRA Annexation Agreement permitted the Army to continue groundwater pumping pending completion of a replacement water supply that was expected by 1999.

In 1993, the United States Army, planning to dispose of property in Fort Ord, entered into the Agreement Between the United States of America and the Monterey County Water Resources Agency Concerning Annexation of Fort Ord Into Zones 2 and 2A of the Monterey County Water Resource Agency. (Agreement No. A-06404 between U.S.A. and MCWRA, Sept 21, 1993 ["1993 Army/MCWRA Annexation Agreement"].) In that agreement, the Army sought annexation of Fort Ord into MCWRA Zones 2 and 2A, the benefit assessment areas for the Nacimiento and San Antonio reservoirs. The agreement required that the Army pay MCWRA $7,400,000 and that MCWRA develop a project to provide at least 6,600 afy of long-term potable water supply because "stopping all pumping from the Salinas Basin on Fort Ord lands is necessary to mitigate seawater intrusion." Until that project was implemented, MCWRA agreed that the Army or its successors in interest could withdraw 6,600 afy with a maximum of 5,200 afy from the 180-foot and 400-foot Aquifers.

The 1993 Army/MCWRA Annexation Agreement contemplated a 6,600 afy potable water supply replacement project by 2000. Thus, it provided that the Army could terminate the agreement if MCWRA had not made reasonable progress by December 31, 1999 on that project. Although MCWRA has not developed the 6,600 afy potable water project, the Army did not terminate the agreement.

B. In 2001, the Army assigned a portion of its groundwater interest to MCWD, reserving 1,729 afy for its own use.

In 1998, FORA and MCWD entered into the Water/Wastewater Facilities Agreement, in which FORA agreed to permit MCWD to acquire the Fort Ord water distribution system from the Army and MCWD agreed to provide water under FORA's supervision and oversight. In the 1998 Water/Wastewater Facilities Agreement, FORA retained primary authority over the Ord community water supply management, including authority to administer groundwater supply capacity rights consistent with the 1993 Army/MCWRA Annexation Agreement, to determine what additional facilities are necessary, to approve capital spending budgets, and to oversee MCWD's operations through a FORA staff Water/Wastewater Oversight Committee. The 1998 Facilities Agreement reaffirms MCWD's earlier commitment not to pump more than 1,400 afy from the Deep Aquifer for use on Fort Ord.

In June 2000, the Army and FORA entered a Memorandum of Agreement for disposal of the Army's interests in Fort Ord. In 2001, consistent with that agreement and

the provisions of the FORA/MCWD 1998 Water/Wastewater Facilities Agreement, the Army through FORA granted the Fort Ord waters supply infrastructure facilities to MCWD in the Assignments Of Easements On Former Fort Ord and Ord Military Community, County of Monterey, And Quitclaim Deed For Water And Wastewater Systems. This Assignment requires MCWD to assume and comply with the terms and conditions of the 2001 conveyance of the water systems from the Army to FORA in the Easement to FORA for Water And Wastewater Distribution Systems Located On Former Fort Ord, including the obligation "to cooperate and coordinate with parcel recipients, MCWRA, FORA, MCWD, and others to ensure that all owners of property at the former Fort will continue to be provided an equitable supply of water at equitable rates." The meaning of "equitable supply" is not defined. Critically, there is no assurance that the equitable considerations will take into account the environmental impacts of providing that supply.

When the Army conveyed its interest in the Fort Ord property, it assigned its interest in groundwater under the 1993 Army/MCWRA Annexation Agreement to MCWD, reserving 1,729 afy of water exclusively for the Federal Government use. (MOA between Army and FORA, June 20, 2000, Article 5.) The Army has apparently subsequently conveyed some portion of this reserved interest to others, because the Fort Ord Reuse Authority reports that the Army now retains an interest of only 1,577 afy. (FORA, Annual Report, Fiscal Year 2017-2018, p. 12, available at https://www.fora.org/Reports/AR/AnnualReport2018-Full.pdf.) FORA reports that the Army consumed 460.45 afy in 2017, and that it has a remaining 1,116.55 afy "allocation." (*Ibid.*) It is this unused "allocation" that LandWatch has been advised that the Army may seek to convey to local agencies.

C. Prior Army environmental review of Fort Ord reuse acknowledges that the right to pump groundwater for Fort Ord is limited in time and that a replacement water supply is required to support civilian reuse of Fort Ord.

To evaluate the impacts, mitigation, and alternatives for the disposal and likely civilian reuse of Fort Ord, the Army prepared an Environmental Impact Statement (EIS) in 1993 and a Supplemental EIS (SEIS) in 1996.

1. **1993 EIS assumes mitigation for civilian reuse will include a replacement water supply**.

The 1993 EIS acknowledges that water demand for civilian reuse will exceed existing water use, "which already exceeds safe yield of the groundwater system in the vicinity of Fort Ord." (1993 SEIS, p. 6-56.) The EIS concludes that "[i]f the increase were supplied by local wells, seawater intrusion would be accelerated." (*Ibid.*) The EIS recommends as non-Army responsibility mitigation for the reuse scenarios in the 1993 EIS that the local civilian agencies "Increase Water Supply or Decrease Total Water Demand to Achieve a Balance." (1993 ROD, pp. 8, 10; 1993 EIS, pp. 6-57 to 6-59.) The 1993 EIR identifies several proposed water projects to supply potable water for reuse,

including the Salinas Valley Water Transfer project, which would have piped well-water from the Arroyo Seco cone to coastal areas; desalination of brackish water; a new dam on the Arroyo Seco; and new reservoirs on the Fort Ord site. (1993 EIR, pp. 6-57 to 6-58.) None of these projects has been completed or are now being planned.

Reflecting the analysis in the 1993 EIS, the 1993 Record of Decision states that "implementation of the Fort Ord Base Reuse Plan will be contingent upon the provision of a long-term, reliable potable water system." (1993 ROD, p. 15.) The 1993 ROD identifies under the heading "Local Commitment to Mitigation Measures" those mitigation measures that the "community has indicated it will implement." (1993 ROD, p. 14.) The community commitment to water supply mitigation recited in the Record of Decision includes provision of a replacement water supply through a 9,000 afy desalination project and/or the 11,000 afy Salinas Valley Water Transfer Project:

> Water Supply Mitigation Measures
> The implementation of the Fort Ord Base Reuse Plan will be contingent upon the provision of a long-term, reliable potable water system. All development will be phased based upon the following framework for water availability that was approved in a memorandum of understanding between the Army and the Monterey County Water Resources Agency. The initial phases of the plan will have approximately 6,600 acre-feet available for the POM annex, the Army Reserve Center, McKinney Act users, the California State University, and other uses, based on water availability and approved by the Fort Ord reuse group (FORG). Latter stages of development will make use of desalination, approximately 9,000 acre-feet and water recycling, approximately 9, 000 acre-feet. Water supplies beyond the year 2000 could be augmented by additional development or substitute for those above based on the availability of 11,000 acre-feet of water from the Salinas Valley Water Transfer Project, which is part of the Sea Water Intrusion Program.

(1993 ROD, p. 15.) Again, twenty five years later, neither the desalination project for the Fort Ord area nor the Salinas Valley Water Transfer Project has been implemented.

2. The 1996 SEIS acknowledges that there is no right to pump the 6,600 afy of groundwater if it causes seawater intrusion and that civilian reuse requires a replacement water supply.

The Record of Decision for the 1996 SEIS explains that supplemental environmental review was intended to evaluate changed conditions, which then included the conveyance of additional assets in excess of the Army's needs and the completion of the Base Reuse Plan. (1996 ROD, p. 1.)

The 1996 SEIS acknowledges that "[t]he water demand for Alternative 7 (with or without the newly excessed lands and revised use areas) would be large enough to result

in seawater intrusion if it is supplied by local wells." (SEIS, p. 5-20.) Alternative 7 is the alternative that reflects reuse according to the Base Reuse Plan.

The 1996 SEIS acknowledges that its 1993 agreement with MCWRA allows it to "pump up to 6,600 af/yr from its existing wells to meet Army water demands, *provided the pumping does not result in seawater intrusion*." (SEIS, p. 5-20, emphasis added.) In short, the 1996 SEIS assumed that any continued use of the 6,600 afy interest in groundwater pumping was contingent on halting seawater intrusion.

The 1996 SEIS states that the water supply for reuse must come from *new* water supply projects:

> The great majority of the water demand for Alternative 7 derives from civilian reuse of former Fort Ord lands. These users will need to cooperate with MCWRA in developing new water supply projects or develop their own water supplies from other sources (e.g., desalination).

(1996 SEIR, p. 5-20.) The 1996 SEIS states that the member agencies of the Fort Ord Reuse Group had entered into a Mitigation Agreement in 1994 that provides that "[t]he reuse of former Fort Ord lands will be planned and implemented in coordination with the Monterey County Water Resources Agency (MCWRA) and other appropriate agencies to ensure adequate water supplies for all reuse areas." (SEIS, p. 3-11.)

In its discussion of cumulative water supply impacts, the 1996 SEIS again states that the 1994 Mitigation Agreement requires the civilian agencies to develop alternative water supplies to support phased future development, *because the 1993 Agreement between the Army and MCWRA requires that groundwater pumping cease:*

> Alternative 7 includes a provision that development will be in phases subject to the availability of adequate water supplies as coordinated with the MCWRA (see the "Mitigation Agreement" portion of Section 3.2.2). The initial phase will use existing supplies that are in excess of Army needs. However, these resources will not be available after the MCWRA project is completed. Under the terms of agreement between the Army and MCWRA, pumping from the Fort Ord wells in the Salinas aquifer will cease unless environmental and national defense requirements like the project are met. Later phases will be contingent on development of new water sources. Some combination of new water supplies, wastewater reclamation, and aggressive water conservation would be needed to implement Alternative 7 without substantially increasing the rate of seawater intrusion. The FORA Final Base Reuse Plan (December 1994) suggests that all these water supply alternatives will be considered in the early phases of reuse but that desalination will be the likely water source for long-term development of former Fort Ord (Fort Ord Reuse Authority 1994).

(1996 SEIS, p. 5-54.)

3. The Army's 1996 Record of Decision recognizes the MCWD water supply allocations are based only on the "short-term" use of groundwater.

After quoting the SEIS language regarding the 1994 Mitigation Agreement by the Fort Ord Working Group, the 1996 Record of Decision acknowledges that the FORA water supply allocation is based only on the *short-term* water supply available under the 1993 Annexation Agreement.

> FORA has developed and coordinated a water allocation plan for reuse based on the short-term water supply available as a result of the Army/MCWRA agreement.

(1996 ROD, Table 3, p. 1.)

D. Overdraft and seawater intrusion have continued and accelerated in the 180-foot and 400-foot Aquifer Subbasin, and the Deep Aquifer is being depleted.

LandWatch engaged hydrologist Timothy Parker to evaluate water supply impact analyses for two recent projects proposed in the Ord Community. Parker is a Certified Engineering Geologist and Certified Hydrogeologist, with over 25 years of geologic and hydrologic professional experience. Parker served as a member of the Technical Advisory Committee to MCWRA in its study of the Salinas Valley Groundwater Basin mandated by Policy PS-3.1 of the 2010 Monterey County General Plan.

In 2016, Parker evaluated the water supply analysis for the proposed Monterey Downs development project.[1] (Exhibit 1, Timothy K. Parker, Technical Memorandum to John H. Farrow, October 8, 2016; *see also* Exhibit 2, John H. Farrow, letter to City of Seaside City Council, October 12, 2016 [forwarding and discussing Parker memorandum].)

In 2018 Parker evaluated the proposed annexation of portions of the former Fort Ord to the MCWD service area.[2] (Exhibit 3, Timothy K. Parker, letter to John H. Farrow, February 15, 2018; *see also* Exhibit 4, John H. Farrow, letter to MCWD Board of Directors, February 19, 2018 [forwarding and discussion Parker letter]; Michael L. DeLapa, letter to MCWD Board of Directors, January 18, 2017 [challenging annexation without environmental impact report].)

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[1] In response to legal challenges to the sufficiency of the Monterey Downs water supply analysis, which assumed that 6,600 afy could be pumped without significant impact, the City of Seaside reversed its approval of that project.

[2] In response to legal challenges to the sufficiency of the environmental review for the MCWD annexation, which assumed that 6,600 afy can be pumped without significant impact, MCWD agreed to eliminate undeveloped sites from the annexation.

Parker explains and documents that overdraft conditions in the 180-foot and 400-foot Aquifer Subbasin have persisted since the time of the Army's 1993 EIS and 1997 SEIS. The Salinas Valley Groundwater Basin still remains out of hydrological balance by 17,000 to 24,000 afy. (Parker 2016, p. 2.) As Parker explains, efforts to halt seawater intrusion have not succeeded; and, by 2016, seawater intrusion had advanced more than five miles further inland compared to conditions in the 1990s. (*Id*., pp. 2-4.) The most recent mapping of seawater intrusion from 2017 shows even more dramatic acceleration of seawater intruded areas, which have occurred despite reductions in MCWD pumping during the 2006-2015 period. (Parker 2018, p. 1.)

Parker also explains that since 2003, as seawater has intruded the 180-foot and 400-foot aquifers in the coastal area, pumping has been substantially shifted to the Deep Aquifer, upsetting any potential equilibrium in the Deep Aquifer. (Parker 2016, pp. 15-16.) Thus, increased pumping of the Deep Aquifer to supply water for Fort Ord development will deplete that aquifer and may induce further seawater intrusion. (*Ibid.*) In light of the continuing advance of seawater intrusion, MCWRA staff have recommended a moratorium on new wells in the Pressure 400-Foot Aquifer within an "Area of Impact" proximate to the 500 mg/l Chloride front. MCWRA also recommended a moratorium on new wells within the entirety of the Deep Aquifers of the 180/400 Foot Aquifer Subbasin pending investigation of its viability as a source of water. Under these circumstances, Parker concludes that any increase in pumping from the MCWD production wells serving the Ord Community would aggravate seawater intrusion. (Parker 2018, p. 2.)

II. The Army must prepare a supplemental EIS before conveying any portion of its reserved interest in groundwater that might be used to support further development.

Before the Army considers assigning or allocating any additional portion of its reserved interest in groundwater to FORA, MCWD, local land use agencies, or particular development projects, the Army must complete a supplemental environmental impact statement.

The National Environmental Policy Act (NEPA) requires that an agency "shall prepare supplements to either draft or final environmental impact statements if (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. (40 CFR § 1502.9(c).) The Army's own regulations for implementing NEPA provide that "Army NEPA documentation must be periodically reviewed for adequacy and completeness in light of changes in project conditions." (32 C.F.R. § 651.5(g).)

A. An SEIS is mandated by significant new circumstances and information.

Here, an SEIS is mandated by significant new circumstances and information relevant to groundwater impacts from pumping to support reuse of the former Fort Ord.

First, seawater intrusion has accelerated as Fort Ord pumping and other cumulative pumping from the Salinas Valley Groundwater Basin has continued. (Parker 2016, pp. 2-5; Parker 2018 pp. 1-2.) The Army's 1996 SEIS acknowledges that its 1993 agreement with MCWRA allows it to "pump up to 6,600 af/yr from its existing wells to meet Army water demands, *provided the pumping does not result in seawater intrusion*." (1996 SEIS, p. 5-20, emphasis added.) Clearly, the prior environmental reviews did not assume that the 6,600 afy of groundwater pumping would occur in the face of continued seawater intrusion.

Second, neither MCWRA nor local agencies have developed the replacement water supply called for in the 1993 MCWRA/Army agreement. MCWRA now acknowledges that its efforts to halt seawater intrusion have not yet been successful, and that additional groundwater management projects would be required. (Parker 2016, pp. 4-5, 21-27.) The Army's 1993 EIS and 1996 SEIS are predicated on the assumption that local agencies had committed themselves to avoid aggravating seawater intrusion and would do so by developing a replacement water supply before permitting new development. (1993 EIS, pp. 6-57 to 6-58; 1993 ROD, pp. 14-15; 1996 SEIR, pp. 3-11, 5-54.)

Third, because FORA and MCWD have treated the short-term supply of 6,600 afy of groundwater as a permanent supply, local land use agencies have permitted development without making that development contingent on provision of a replacement water supply. MCWD acknowledges that its sole potable water supply source is the Salinas Valley Groundwater Basin and that to serve Fort Ord development it relies entirely on the purported 6,600 afy "allocated groundwater pumping rights" that MCWRA granted to the Army in 1993. (MCWD, 2015 Urban Water Management Plan, June 2016, p. 30, available at https://www.mcwd.org/docs/engr_files/MCWD_2015_UWMP_Final.pdf.) MCWD claims that "[u]nder that 1993 Agreement, 6,600 afy of Salinas Basin groundwater is available for use on Ord Community lands." (*Id.*, p. 16.) MCWD projects that by 2035, water demand to support Fort Ord development will total 8,292 afy. (*Id.*, pg. 21, Table 3.5.) However, MCWD claims that it will not have to find additional water supplies until it has exhausted the 6,600 afy "existing groundwater pumping rights." (*Id.*, p. 16.) In effect, MCWD and FORA now assume that the "short-term" 6,600 afy interest in groundwater pumping MCWRA granted to the Army in 1993 represents a permanently available supply that can be relied on to support indefinitely the permanent civilian residential and commercial development projects. As discussed above, the Army's prior environmental reviews assumed that a replacement water supply would be implemented and that all groundwater pumping would cease.

Fourth, FORA is now required to sunset by 2020 (Gov. Code, § 67700(a)), and there is no committed plan in place to limit future groundwater pumping to support civilian reuse. (See Exhibit 3, John Farrow, letter to MCWD Board of Directors re Negative Declaration and Initial Study for Ord Community Sphere of Influence Amendment and Annexation for the Marine Coast Water District (MCWD), February 19, 2018, pp. 4-8.) When FORA's oversight of groundwater resources ends and 1998 Water/Wastewater Facilities Agreement terminates, MCWD will have no constraint on its groundwater pumping other than the obligation to provide an "equitable supply of water at equitable rates." (*Id.*, p. 6.) As discussed, the Army's prior environmental review assumed that FORA would allocate only the "short-term" use of groundwater. (1996 ROD, Table 3, p. 1.)

B. An SEIS is mandated by substantial change to the previously proposed action.

The Army's future allocation of any additional portions of its reserved interest in groundwater to support and induce long-term development in the former Fort Ord would be a substantial change to the Army's proposed 1993 and 1996 actions to dispose of and permit reuse of Fort Ord. That action contemplated that the 6,600 afy would not be used indefinitely and permanently to support civilian reuse, but instead would be a short-term arrangement pending provision of a replacement supply.

C. The Army committed itself to supplemental environmental review in its 1993 EIS and 1996 SEIS.

The 1993 Record of Decision commits the Army to "develop additional environmental analysis following this record of decision (ROD) to address impacts of those uses in the community's reuse plan not already addressed in the EIS." (1993 ROD, p. 3.) Neither the 1993 EISW nor the 1996 SEIS evaluated the impact of the permanent commitment of 6,600 afy to support civilian reuse. To the contrary, the prior reviews assumed that groundwater pumping on the former Fort Ord would cease when a replacement water supply was developed.

The Army also committed itself not to dispose of property before evaluating the reuse impacts:

> The Army will not dispose of property for reuse not covered by this EIS until the environmental evaluation is complete. The additional evaluation will be used to determine if adequate planning changes or mitigation measures have been developed or included through the local planning process.

(1993 ROD, p. 3.) Accordingly, the Army should not dispose of its remaining interest in water supply without an SEIS because it is now clear that "adequate planning changes or mitigation measures" have *not* been "developed or included through the local planning process."

The 1996 ROD acknowledges that an SEIS is required for changed conditions, e.g., completion of Base Reuse Plan and the conveyance of additional assets in excess of Army's needs. (1996 ROD, p. 1.) The sunsetting of FORA, the termination of the 1998 Water/Wastewater Facilities Agreement governing water supply, and the end of the Base Reuse Plan are at least as significant changes in conditions as the initial completion of the Base Reuse Plan. Furthermore, the conveyance of an additional interest in groundwater in excess of the Army's needs is property disposition that would also demand an SEIS.

III. Request for notice

Pursuant to 40CFR § 1506.6(b)(1), LandWatch requests mailed and e-mailed notice of NEPA-related hearings, public meetings, and the availability of environmental documents related to any action by the Army concerning groundwater in the former Fort Ord, including, but not limited to, any proposed disposal of the Army's interest in groundwater in the former Fort Ord. (See also 32 CFR §§651.22, 651.23, 651.25, 651.36, 651.47 [public involvement required for Army NEPA compliance].) Notice should be provided as follows:

Michael Delapa
Executive Director
LandWatch Monterey County
306 Capitol Street, Suite 101
Salinas, CA 93901
execdir@landwatch.org

John Farrow
M. R. Wolfe & Associates. P.C.
555 Sutter Street, Suite 405
San Francisco, CA 94102

jfarrow@mrwolfeassociates.com

IV. Offer to meet

LandWatch encourages the Army to consider the issues raised in this letter before it takes any action affecting groundwater in the former Fort Ord. LandWatch is willing to meet with you or other Army representatives to discuss these issues and to attempt to resolve LandWatch's concerns about groundwater use in the Fort Ord area.

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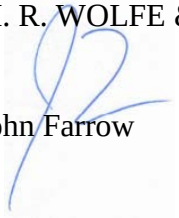
Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



John Farrow

JHF:hs

cc:
Fort Ord Reuse Agency
Marina Coast Water District

County of Monterey Board of Supervisors and Chief Administrative Officer
City of Seaside City Council and City Manager
City of Marina City Council and City Manager
City of Monterey City Council and City Manager
City of Del Rey Oaks City Council and City Manager
California State University at Monterey Bay, Office of the President

Exhibits

1. Timothy K. Parker, Technical Memorandum to John H. Farrow, October 8, 2016.
2. John H. Farrow, letter to City of Seaside City Council, October 12, 2016.
3. Timothy K. Parker, letter to John H. Farrow, February 15, 2018.
4. John H. Farrow, letter to MCWD Board of Directors, February 19, 2018.
5. Michael L. DeLapa, letter to MCWD Board of Directors, January 18, 2017.

EXHIBIT 3

m | r | wolfe
& associates, p.c.
attorneys-at-law

February 19, 2018

Board of Directors
Care of Paula Riso, Clerk to the Board
Marina Coast Water District
11 Reservation Road,
Marina, CA 93933
priso@mcwd.org

Re: Negative Declaration and Initial Study for Ord Community Sphere of Influence Amendment and Annexation for the Marine Coast Water District (MCWD)

Dear Member of the Board:

I write on behalf of LandWatch Monterey County to object to the inadequate environmental review of Marina Coast Water District's proposed Sphere of Influence Amendment and Annexation.

As LandWatch explained in its January 18, 2018 comments to the Board, the proposed annexation would allow and facilitate increased pumping of the Salinas Valley Groundwater Basin to provide additional water for projected development in the Ord Community, which is projected to require an additional 2,492 afy by 2035. This increased pumping would make a considerable contribution to significant cumulative impacts, including seawater intrusion and overdraft and depletion of the affected aquifers.

The Initial Study does not provide an adequate environmental analysis of the impacts of increased pumping to support future Ord community development, an analysis that is required to support annexation. FORA, the agency with overall authority and responsibility to manage water resources for the Ord community, will terminate in 2020. MCWD proposes the annexation in contemplation of that termination. Because there is no assurance that the present water management policies and mitigation measures will continue, and because these policies and mitigation measures have been ineffective, MCWD must evaluate the impacts that may occur after FORA is dissolved. If MCWD does not evaluate the impacts and is allowed to annex the land as it proposes, the significant water problems that the Army transferred to FOR A will in turn be transferred to MCWD – without assessment and without a commitment to avoid further harm.

If MCWD's proposed annexation is allowed to proceed prior to approval of a FORA transition plan and some new commitment to manage the water resource impacts from the Ord community, then it should be limited to just those parcels to which MCWD is currently providing service, e.g., parcels with a water meter that are currently being served. Without an adequate environmental review of the impacts of providing additional water for new development, MCWD should not act to commit itself in any way to serve these areas with water in the future.

At MCWD's January 20, 2018 meeting, the Board considered a proposed negative declaration. MCWD now proposes to adopt a negative declaration and to find the project exempt from CEQA. The record does not support either a negative declaration or an exemption.

A. Increased groundwater pumping to support future development of the Ord Community would be a considerable contribution to significant cumulative impacts in the form of seawater intrusion and depletion of the Deep Aquifer, but MCWD and the Initial Study fail to acknowledge this.

LandWatch's January 18 letter to MCWD and its attachments demonstrate that additional pumping to support Ord Community development will aggravate seawater intrusion and deplete the Deep Aquifer. Comments by hydrologist Timothy Parker in his February 15, 2018 letter, attached to this letter, further amplify this concern.

Comments by LandWatch and Parker demonstrate that seawater intrusion has continued *despite* the Fort Ord Reuse Plan policies and mitigation that were supposed to ensure that new development not use groundwater if seawater intrusion was not halted.

A key reason for this continuing harm has been the practices by FORA, MCWD, and FORA member agencies of (1) misinterpreting the 6,600 afy allocation of water rights to Fort Ord as an amount that can be pumped without harm, (2) ignoring the Fort Ord Reuse Plan policies that mandate the development of an additional water supply if seawater intrusion continues instead of pumping right up to the 6,600 afy allocation, and (3) failing to determine and respect the safe yield of the aquifers that are used to supply the ORD community. As Timothy Parker explained:

> The BRP PEIR [Base Reuse Plan Program EIR] provides specific policy requirements to ensure adequate, timely mitigation of seawater intrusion, mitigation that may need to be implemented before 6,600 afy is committed or pumped for new development. Policy B-1 requires that the FORA members "shall ensure additional water supply." Policy B-2 requires conditioning project approval on verification of an "assured long-term water supply." Policy C-3 requires the member agencies cooperate with MCWRA and MPWMD "to mitigate further seawater intrusion based on the Salinas Valley Basin

> Management Plan." Program C-3.1 requires the member agencies to work with the water agencies "to estimate current safe yields within the context of the Salinas Valley Basin Management Plan for those portions of the former Fort Ord overlying the Salinas Valley and Seaside groundwater basins, to determine available water supplies." MCWRA has now determined that the safe yield of the Pressure Subarea is about 110,000 to 117,000 afy and that existing pumping exceeds this safe yield by about 12,000 to 19,000 afy.[1] Indeed, the BRP PEIR acknowledges that pumping in the 180-foot and 400-foot aquifers had "exceeded safe yield, as indicated by seawater intrusion and water levels below sea level." (BRP PEIR p. 4-63.) The BRP PEIR states that the "conditions of the 900-foot aquifer are uncertain", including the safe yield and whether the aquifer is in overdraft. *Id.*
>
> The BRP PEIR explains that Policies B-1, B-2, and C-3 are intended to "affirm the local jurisdictions' commitment to preventing further harm to the local aquifers . . . by limiting development in accordance with the availability of secure supplies." (BRP PEIR, p. 4-55.) The explicit provisions for determination of safe yield and for acceleration of water supply projects if 6,600 afy cannot be supplied without further seawater intrusion clearly demonstrate the intent that the member agencies not simply defer action until 6,600 afy has been allocated to development projects if seawater intrusion continues. To the contrary, it seems clear that the BRP PEIR directed the member agencies "to mitigate further seawater intrusion" by, among other things, ensuring that groundwater pumping beyond the determined safe yield is not permitted for new development projects. The BRP PEIR's cumulative analysis makes it clear that Policy C-3 does not permit uncritical reliance on a 6,600 afy allocation: "existing water allocations of 6,600 afy . . . would allow for development to proceed to the year 2015, <u>provided that seawater intrusion conditions are not exacerbated</u> (Policy C-3)." (BRP PEIR p. 5-5 (emphasis added).)

Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 8-9.

In light of the historic failure to honor the Fort Ord Reuse Plan policies and mitigation, the contention in the Annexation Initial Study that these measures "have been incorporated in local jurisdiction planning documents" is either untrue or irrelevant to the issue of water supply impacts. Annexation Initial Study, p. 52.

MCWD's Annexation Initial Study is inadequate because it fails to acknowledge that increased pumping to support Ord community development will cause impacts. The Annexation Initial Study fails to acknowledge that it is no longer possible to rely on the

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[1] MCWRA, State of the Salinas River Groundwater Basin, p. 4-25.

1997 Fort Ord Reuse Plan EIR due to changes in circumstances, new information, and failure to implement the Fort Ord Reuse Plan itself. These include

- The significant advance in the seawater intrusion front since 1997, which should have precluded any reliance on the presumption that there is 6,600 afy of water to use without impact and should have triggered the obligation under the Fort Ord Reuse Plan to accelerate the provision of alternative supplies for any new development;
- The failure of MCWRA and MPWMD to mitigate further seawater intrusion based on the Salinas Valley Basin Management Plan, as provided by the Fort Ord Reuse Plan;
- The failure of member agencies to prevent harm to the affected aquifers by limiting development in accordance with the availability of secure water supplies, as provided by the Fort Ord Reuse Plan;
- The failure of FORA, MCWD, MCWRA, and member agencies to determine and abide by the safe yield, including the safe yield of the Salinas Valley Groundwater Basin and its Deep Aquifer, as required by the Fort Ord Reuse Plan;
- Significant new information regarding the Deep Aquifer. As explained by Parker and the 2018 MCWRA report recommending a moratorium on new wells in the Deep Aquifer, there is no evidence of significant recharge to the Deep Aquifer, and increased pumping will result in its depletion and will induce seawater intrusion in the overlying aquifers.

Furthermore, as discussed below, even if the Fort Ord Reuse Plan policies and mitigation were effective in avoiding impacts, there is no assurance that MCWD would be subject to these policies and mitigation after FORA is dissolved in 2020.

B. MCWD's proposed annexation is a project subject to CEQA because (1) MCWD acts in the expectation that FORA will be dissolved and that MCWD will assume authority for provision of water for new development unconstrained by FORA or Fort Ord Reuse Plan policies and (2) MCWD would serve new development with additional groundwater pumping.

MCWD's claim that its proposed annexation would have no physical impacts is based on two unfounded assumptions: that there have been no changes to the environmental setting that would warrant new analyses and that MCWD would continue to provide the same amounts of water that have been previously *planned* and in accordance with the existing management regime. Annexation Initial Study, pp. 11, 18, 23. As discussed above, the first assumption is incorrect because there have been

substantial changes to the environmental setting, significant new information, and changes to the Fort Ord Reuse Plan.

The second assumption, that MCWD would simply implement existing plans for water supply is legally irrelevant and factually incorrect. The assumption is legally irrelevant with respect to the duty to provide an adequate analysis because CEQA requires an agency to compare its action to a baseline consisting of existing conditions, not a baseline consisting of a plan or a hypothetical future condition. Thus, it is not sufficient for the Initial Study to claim there would be no change to previous *plans* for groundwater pumping because the salient question is whether there would be changes to *existing* groundwater pumping.

The second assumption is factually incorrect because, as discussed below, the existing management regime for the Ord community water supply will be terminated in 2020, and MCWD is proposing to act based on that expectation, but without proposing a replacement plan.

1. MCWD acts in the expectation that FORA will be dissolved; and MCWD may assume authority for provision of water for new development unconstrained by FORA or Fort Ord Reuse Plan policies.

FORA is required to dissolve itself by June 30, 2020. Gov. Code, § 67700(a). Indeed, MCWD proposes the annexation with the expectation that the FORA will be dissolved by 2020, and MCWD expressly rejects the no-project alternative for just that reason. Annexation Initial Study, Appendix D.

Currently, MCWD is subordinate to FORA in critical decision-making regarding water supply under the Water/Wastewater Facilities Agreement between FORA and MCWD. Water/Wastewater Facilities Agreement, March 13, 1998, Articles 4.1, 5.1.1, 5.2. Thus, FORA, not MCWD, is authorized to obtain water extraction capacity rights. *Id.*, Article 3.4.1. And FORA, not MCWD, has decided to sub-allocate 6,600 afy of its presumed capacity rights to its member agencies. FORA, Development Resources Management Plan (DRMP), section 3.11.5.4 and Table 3.11-2, available at http://www.fora.org/Reports/DevResourcePlan.pdf. And, FORA, not MCWD, has primary responsibility to implement the policies and mitigation contained in the Fort Ord Reuse Plan.

The 1998 Water/Wastewater Facilities Agreement will no longer be in effect after FORA sunsets. Water/Wastewater Facilities Agreement, March 13, 1998, Article 9. Thus, after FORA is dissolved, and in the absence of another binding plan addressing water supply issues, MCWD, as a County Water District, would assume plenary authority over the water use and allocation that is currently constrained by FORA. For example, MCWD would have essentially unfettered responsibility and authority to establish rules

and regulations for water distribution. Gov. Code, § 31024. MCWD would have also have unfettered responsibility and authority to restrict water use in accordance with a threatened or existing water shortage. Gov. Code, §§ 31026, 31029.1, 31035.1; Water Code § 350.

After FORA is dissolved, and in the absence of the 1998 Water/Wastewater Facilities Agreement or a binding transition plan addressing water supply issues, MCWD's provision of water supply might be constrained only by the October 2001 "Assignments Of Easements On Former Fort Ord and Ord Military Community, County of Monterey, And Quitclaim Deed For Water And Wastewater Systems." This Assignment would purport to constrain MCWD to assume and comply with the terms and conditions of the October 24, 2001 "Federal Instruments" that conveyed the water systems from the Army to FORA. These Federal Instruments include, as consideration for the transfer, the assumption of the Army's obligation "to cooperate and coordinate with parcel recipients, MCWRA, FORA, MCWD, and others to ensure that all owners of property at the former Fort will continue to be provided an *equitable supply of water* at equitable rates." Department of the Army, Easement to FORA for Water And Wastewater Distribution Systems Located On Former Fort Ord," paragraph 2, emphasis added. However, the meaning of "equitable supply" is not defined. Critically, there is no assurance that the equitable considerations will take into account the environmental impacts of providing that supply. It is possible that MCWD would interpret "equitable" by simply reaffirming its stubborn and unsustainable commitment to provide up to 6,600 afy of groundwater regardless of environmental impacts.

Although FORA is now considering a transition plan, no plan has yet been adopted or approved by LAFCO. It is not yet clear whether there will be a successor agency to FORA, or, if there is, what powers and responsibilities that successor agency may have to manage water resources. In its transition planning, FORA has raised, but not yet answered, the critical questions as to the continuing effect of the Fort Ord Reuse Plan policies and mitigation provisions and the meaning of the obligation to provide a "fair and equitable" water supply. Consider this excerpt from FORA's most recent transition planning update:

> "MCWD ANNEXATION: All infrastructure and water rights were provided to MCWD to provide for a fair and equitable water allocation. Can MCWD later only annex a portion of the former Fort Ord? Is this consistent? Does LAFCO need to consider and abide by the Fort Ord Reuse Plan when considering MCWD annexation?
>
> "In the event of a water shortage how will MCWD provide a "fair and equitable" water supply to the former Fort Ord? Will only entitled projects receive water? Only projects with a water supply assessment?"

FORA Board Report, Transition Planning Update, January 12, 2018, Attachment A1, Transition Planning/Summary Chart, Water Wastewater.

As discussed, the Fort Ord Reuse Plan policies and mitigation have not been effective in preventing further seawater intrusion or depletion of the Deep Aquifer. More fundamentally, as FORA acknowledges, MCWD may not even have to *abide by* these ineffective policies and mitigation after 2020. Certainly LAFCO cannot approve MCWD's proposed annexation without resolving this question.

In response to LandWatch's comments, the Final Initial Study/Negative Declaration (FIS/ND) claims that FORA allocates water supply. FIS/ND, p. 43. The Final Initial Study/Negative Declaration also claims that the annexation would not change the Fort Ord Reuse Plan policies. FIS/ND, p. 49. MCWD has failed to acknowledge that FORA will no longer manage this process, the Reuse Plan Policies will no longer govern the resource, and that MCWD will have the primary authority to do so.

To support LAFCO in its determination whether to approve annexation, and before MCWD is assigned any additional authority over the water resources, MCWD must provide an adequate analysis of water supply impacts and an *effective* plan to avoid or mitigate significant impacts – a plan that will supersede the ineffective Fort Ord Reuse Plan. The Annexation Initial Study does not provide such an analysis or plan. Instead, it states that addressing the Fort Ord Reuse Plan policies is "beyond the scope of the IS/ND." FIS/ND, p. 47.

As FORA also acknowledges, there is no understanding of MCWD's future obligation to provide an "equitable" water supply in the context of a water shortage. Indeed, MCWD fails to recognize that a significant water shortage *already* exists, and that this requires hard decisions about supplies for future development, because MCWD's Annexation Initial Study fails to come to terms with continuing seawater intrusion and aquifer depletion. Absent an adequate CEQA document that takes into account current conditions, and without a binding and continuing commitment to avoid or mitigate impacts, there is no assurance that MCWD would interpret "equitable" to ensure protection of the groundwater resources.

And as FORA points out, there are other water supply-related issues that must be clarified before FORA sunsets. For example, FORA admits that it has not yet met the Fort Ord Reuse Plan FEIR's mitigation requirement to develop a 2,400 afy water augmentation plan because MCWD's RUWAP project at 1,427 afy does not provide sufficient capacity. FORA Administrative Committee, Memorandum, January 27, 2016, p. 2, available at http://www.fora.org/TTF/Additional/Transition-SunsetPlanMemo.pdf. And FORA admits that oversight over Fort Ord water allocations must be assigned to another entity before its dissolution. *Id.*, p. 4.

MCWD's Agenda Transmittal, its proposed findings, and its response to comments all claim incorrectly that there would be no change to water service after the annexation because MCWD is contractually obliged to supply water. Agenda Transmittal, pp. 1, 3; FIS/ND, p. 49; Proposed Findings, p. 1. This claim fails to acknowledge that the annexation is being undertaken in express contemplation of the expiration of the primary contract that governs MCWD, the 1998 Facilities Agreement, which would end FORA's authority to allocate water and manage the resource. As a County Water District for the annexed areas, MCWD would have the authority to allocate water and to respond to water shortages, without any oversight by FORA, and subject only to the undefined obligation as a FORA successor to provide "equitable" service under the Army easement. Department of the Army, Easement to FORA for Water And Wastewater Distribution Systems Located On Former Fort Ord," paragraph 2.

In light of MCWD's assumption that it can pump up to 6,600 afy without further aggravation of seawater intrusion or depletion of the Deep Aquifer, MCWD is poorly positioned to accept the responsibility to manage the water resource. Thus, it is critical that MCWD provide an adequate environmental review before it annexes undeveloped portions of Fort Ord. CEQA requires an adequate review as a document of public accountability that protects informed self-government.

2. Annexation will allow and lead to additional groundwater pumping.

The response to comments states that the annexation is of "developed areas," and the proposed findings reference "annexation of developed areas already served by MCWD" and "all customers currently served." FIS/ND, p. 40; Proposed Findings, p. 2. The response to comments repeatedly claims that the annexation "will not allow for [] any increase in groundwater pumping. FIS/ND, pp. 46, 47.

This claim is not true. First, elsewhere in its response to comments, MCWD claims only that the "*majority* of the areas to be annexed are currently served." FIS/ND, p. 49, emphasis added. Second, the list of areas to be annexed in the Initial Study clearly includes undeveloped areas for which future development may occur and that are not currently being served. Annexation Initial Study, pp. 16-17. Indeed, the list of annexation areas includes a number of areas for which there are no development entitlements or for which there is not even an approved specific plan. Nothing in the proposed annexation would prohibit service based on increased groundwater pumping to parcels or development projects that are not currently served. As discussed below, the refinement to the project description in the Final Initial Study/ Negative Declaration to reduce the scope of the annexation does not exclude all undeveloped areas. See FIS/ND, pp. 60-61.

Contrary to the response to comments (FIS/ND, p. 41), the current Urban Water Management Plan and Annexation Initial Study do provide evidence of planned increases

in service for new development in the Ord community. MCWD's current UWMP projects an increased demand of 2,492 afy to serve Fort Ord development between 2020 and 2035. MCWD, 2015 UWMP, p. 21. The Annexation Initial Study repeats this projection and identifies it as the "total expected growth in demands from all currently expected development projects and population growth through 2035. Annexation Initial Study, p. 51.

And contrary to the response to comments (FIS/ND, p. 46), MCWD's plans do allow and assume the full use of the 6,600 afy groundwater allocation. For example, in calculating the Ord community groundwater shortfall through 2035, the UWMP assumes the full use of the 6,600 afy groundwater allocation. MCWD, 2015 UWMP, p. 57 (Table 4.3). MCWD's calculated need for an additional 2,901 afy to meet its groundwater shortfall is based on the difference between the 8,293 afy 2035 demand and the 6,600 afy allocation. *Id.* The Annexation Initial Study also assumes that the 6,600 afy allocation will be used to meet Ord community demand. See, e.g., Annexation Initial Study, pp. 50-51, Tables 5 and 6, notes 4 (comparison of demand growth to supply assumes use of 6,600 afy allocation plus 300 afy of existing desalination capacity).

Contrary to the response to comments (FIS/ND, p. 44-45), the fact that MCWD has plans to obtain recycled or desalinated water does not mean that it does not intend to exhaust the 6,600 afy groundwater allocation, regardless of the impacts of any increased pumping. MCWD's plans to develop addition water supplies are based on fulfilling its incorrect interpretation of the Fort Ord Reuse Plan requirement for augmented water supplies, which would be to require additional water supplies only after the 6,600 afy is exhausted. As set out in previous comments by Parker and LandWatch, MCWD and FORA have misinterpreted the Fort Ord Reuse Plan to permit the full use of the 6,600 afy groundwater allocation regardless whether increased pumping aggravates seawater intrusion and regardless of whether it has been determined to represents a safe yield. Significantly, MCWD's response to comments admits that the 6,600 afy allocation is neither the baseline use nor a sustained yield. FIS/ND, pp. 46-47.

Furthermore, MCWD has offered to furnish 600 afy of its entitlement to PWM/GWR recycled water and up to 700 afy of groundwater for use, directly or indirectly, on the Monterey Peninsula, for a ten-year term with options for renewal.[2] This offer is not identified as a potential use of MCWD's water resources in its 2015 UWMP. MCWD's willingness to commit its recycled water and groundwater supplies to this venture is further evidence that MCWD expects to be able to use the entire 6,600 afy allocation for Ord community demand.

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[2] California Public Utilities Commission, Proceeding A1204019, In the Matter of the Application of California-American Water Company (U210 W) for a Certificate of Public Convenience and Necessity to Construct and Operate its Monterey Peninsula Water Supply Project and to Recover All Present and Future Costs in Connection Therewith in Rates, Direct Testimony Of Keith Van Der Maaten, Submitted On Behalf Of Marina Coast Water District -Supplemental Phase 1 Testimony, Sept. 29, 2001, pp. 10-14.

Finally, MCWD's *approved and funded* plans for additional water supplies will not even make up the 2,901 afy Ord community shortfall in 2035. MCWD, 2015 UWMP, p. 57 (Table 4.3 - shortfall); FIS/ND, p. 45 (outlining approved plans). And as noted, FORA and MCWD have not yet met the Fort Ord Reuse Plan FEIR's mitigation requirement to develop a 2,400 afy water augmentation plan because MCWD's RUWAP project at 1,427 afy does not provide sufficient capacity. FORA Administrative Committee, Memorandum, January 27, 2016, p. 2.

C. MCWD's negative declaration is inadequate and an EIR is required.

As discussed above and in previous comments, the proposed negative declaration is inadequate because it fails to disclose impacts to groundwater due to increased pumping. Those comments, supported by expert opinion and by substantial scientific evidence, constitute a fair argument that the annexation may result in significant impacts. Accordingly, an EIR is required if MCWD intends to pursue the proposed annexation.

In addition to its failure to disclose significant impacts, the Initial Study is flawed in other respects, and its flaws are not cured by the Final Initial Study/Negative Declaration.

Revisions to the project description are offered in the Final Initial Study/Negative Declaration in order to make the project "more environmentally benign." FIS/ND, pp. 60-61. Revisions to a project to mitigate potentially significant effects must be included in the negative declaration that is circulated for public review. Public Resources Code §21080(c)(2); 14 CCR §§ 15070(b), 15071(e). Given the change to the project description, MCWD must recirculate the negative declaration. 14 CCR §15073.5.

Furthermore, the last-minute revisions render the project description unclear. First, the inclusion of the refinements in the Appendix D for alternatives renders it unclear whether the revisions are part of the project or merely an alternative project that may or may not be approved. The proposed findings do not clarify this. Second, the revisions are made with reference to large scale maps and parcel descriptions. No explanation is provided as to which part of the future development identified in the Annexation Initial Study in Table 2 would be included or omitted from the proposed annexation, although it is apparent that the revisions do not restrict the annexation area to parcels that are currently served by MCWD. In sum, the revision is insufficient because the public has no way to determine what the scope of the actual annexation project would be and because the annexation would still include undeveloped parcels expected to be developed. This must be rectified before MCWD acts to certify a CEQA document, whether a negative declaration, an exemption, or an EIR.

Purporting to buttress the claim that it provides an adequate impact analysis, the Final Initial Study/Negative Declaration "references" a number of additional CEQA documents as "background documentation." FIS/ND, pp. 46, 52-53, 59-60. The Final Initial Study/Negative Declaration also incorporate by reference three of these documents: the RUWAP EIR and Addenda, the PWM/GWR EIR and Addenda, and the Fort Ord Reuse Plan EIR. FIS/ND, pp. 52-53. These documents do not cure the failure of the Annexation Initial Study to provide an adequate analysis.

First, the Final Initial Study/Negative Declaration disavows any actual reliance on these documents: "the IS/ND does not tier from the previous documents or rely on the conclusions in the previous documents for its conclusions regarding potential environmental impacts of the project." FIS/ND, p. 53.

Second, the Annexation Initial Study fails to summarize, explain, or provide a roadmap to these referenced documents. The bare fact that CEQA review of prior development and alternative water supply projects has occurred does not address the concerns LandWatch has raised regarding the effects of supplying additional groundwater to future development.

Third, as previous comments have explained, reliance on the analysis in the 1997 Base Reuse Plan EIR is misplaced due to changed circumstances and the failure to implement its policies and mitigation.

Fourth, the Annexation Initial Study discusses the RUWAP and PMW/GWR projects to support its claim that additional water supplies are planned; however, it does not summarize or discuss any findings in these documents that would be relevant to the impacts of increased groundwater pumping. Indeed, it is unlikely that an EIR for these projects, which are intended to supply water in lieu of groundwater, would provide an analysis of the effects of increased groundwater pumping, including the effects of MCWD exhausting the 6,600 afy allocation.

Fifth, none of these prior CEQA documents reflect the significant new information relevant to the impacts of increased pumping, such as the most recent seawater intrusion mapping or the MCWRA recommendations for pumping moratorium in the Deep Aquifer and the 400-foot aquifer proximate to the seawater intrusion front.

Contrary to the response to comments (FIS/ND, pp. 42-43), the Initial Study does not present an adequate cumulative analysis. The fundamental flaw is that the Initial; Study fails to acknowledge the severity of the existing cumulative impact or to assess whether any increase in groundwater pumping would be a considerable contribution in light of the serious problem.

The cumulative analysis is deficient in other respects. For example, the Initial Study provides no justification, and there is none, for the claim made in the Final Initial Study/Negative Declaration that the proper geographic scope of cumulative analysis can be confined to the former Fort Ord area. FIS/ND, p. 58. Seawater intrusion and aquifer depletion impacts are due to pumping throughout the Salinas Valley Groundwater Basin. As Mr. Parker explains, the area that would be affected by increased groundwater pumping includes the Pressure Subbasin and the Salinas Valley Groundwater Basin as a whole since these areas are hydraulically interconnected. Furthermore, CEQA does not define the geographic scope of cumulative analysis based on the area *affected* but based on the location of the cumulative projects that *cause effects* in the same area that the project causes effects. The Guidelines require identification of projects "producing related or cumulative impacts" or projections of conditions "contributing to the cumulative effect." Guidelines §15130(b)(1). Case law is clear that it is improper to omit relevant past, present, and future projects that create related impacts. *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1213-1214; *Citizens to Preserve the Ojai v. County of Ventura* (1985) 126 Cal.App.3d 421, 430-432; *San Joaquin Raptor Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 739-741; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720, 724. As Mr. Parker explains, it is indisputable that past, present and future projects and pumping outside the Ord community affect the aquifer depletion and seawater intrusion to which addition pumping for the Ord community would contribute. This is acknowledged by the Reuse Plan EIR (at p. 5-5, acknowledging that regional growth could cumulatively affect aquifers and cause further overdraft and seawater intrusion), the MCWD 2010 UWMP (at p. 29, acknowledging that basin-wide pumping causes declining water levels in Pressure Subarea), and the Army's 1993 FEIS (at p. 4-57, acknowledging that the available yield without seawater intrusion depends on the amount of pumping throughout the basin). The Annexation Initial Study simply fails to provide any justification for limiting the scope of cumulative analysis to the Ord community.

Nor does the Annexation Initial Study provide other essential information for cumulative analysis. An adequate analysis must provide either (1) a list of past, present, and future projects producing related impacts, including projects outside the control of the agency, of (2) a summary of projections of regional conditions contributing to the cumulative impact. 14 CCR § 15130(b)(1). There is no information about projected groundwater pumping in the Salinas Basin or its Pressure Subbasin.

In fact, the Annexation Initial Study does not provide any actual analysis of cumulative impacts other than vague references to the discussion in the Reuse Plan EIR. FIS/ND, p. 58. Not only is that prior analysis out of date, but, as noted, the Annexation Initial Study states that it "does not tier from the previous documents or rely on the conclusions in the previous documents for its conclusions regarding potential environmental impacts of the project." FIS/ND, p. 53.

D. The project is not exempt.

Although MCWD did not include a proposed finding that the annexation would be exempt on the agenda for its January 20, 2018 meeting, staff has now proposed a finding of exemption to be considered at the February 20, 2018 meeting. Staff proposed that the Board find the annexation exempt under 14 CCR §§ 15301, 15319, or 15061(b)(3).

The exemption for existing facilities under 14 CCR § 15301 is inapplicable because that exemption precludes any expansion of previous use beyond that existing at the time of the lead agency's determination. Because the annexation will allow, and is intended to facilitate, the provision of water supply to currently undeveloped parcels there would be an expansion of previous use.

The exemption for annexations of existing facilities and lots for exempt facilities under 14 CCR § 15319 is inapplicable because that exemption is not allowed if it is foreseeable that utility services would extend into the annexed parcels and have the potential to serve a greater capacity than existing uses. Again, the annexation will allow, and is intended to facilitate, the provision of water supply to currently undeveloped parcels. Thus, there is an obvious potential to serve a greater capacity than existing uses.

Even if the annexation otherwise qualified for a categorical exemption, an exemption would be prohibited here due to the presence of unusual circumstances and the possibility of a significant impact. 14 CCR § 15300.2(c). One unusual circumstance is the fact that the annexation is being undertaken with the expectation that the existing governance structure to protect the resource will be terminated, leaving MCWD free to manage the resource without constraints of the current governance structure. Another unusual circumstance is that the existing governance structure has not in fact protected the resource because it has allowed ground water pumping to induce further seawater intrusion and to exceed sustainable yield, and MCWD has not committed itself to avoid additional groundwater pumping.

A categorical exemption would also be barred because the cumulative effect of successive projects of the same type in the same place over time would be significant. 14 CCR § 15300.2(b). MCWD has identified the remainder of the developable areas of the Ord community as future study areas for annexation and seeks to include them in its sphere of influence. Thus, MCWD contemplates successive annexations in the Fort Ord area, which would result in provision of additional groundwater, resulting in a significant cumulative impact.

The common sense exemption under 14 CCR § 15061(b)(3) does not apply because MCWD cannot find with certainty that that there is no possibility of a significant effect. MCWD's claim in this regard is based on the incorrect assertion that there would

be no change to existing conditions after the annexation. In fact, the annexation would allow, and is intended to facilitate, increased groundwater pumping to support new development in the Ord community. This increased pumping would result in significant impacts. Furthermore, the annexation is proposed with the expectation that the current governance structure intended to protect the water resource will terminate and without any commitment to a governance structure that would in fact protect the resource.

E. Annexation should be deferred until approval of a FORA transition plan or some other plan to manage water for future development; or, if annexation is not deferred, it should be limited to developed parcels already served by MCWD.

MCWD's proposed annexation puts the cart before the horse; it should await approval of a FORA transition plan that will address provision of water for future development in the Ord community. Alternatively, it must be accompanied with the adoption of policies, regulations, and mitigation that would ensure that provision of water supply for future development in the Ord community will not cause significant impacts.

LAFCO staff explain that the FORA transition plan must provide "clear direction on all projects, obligations and other pending matters in the transition plan." Kate McKenna, Report of the Fort Ord Reuse Authority (FOR A) Dissolution Process, January 22, 2018, p. 4. LAFCO staff explain that the transition plan is required in order to "*lay the foundation for future LAFCO actions such as annexations by local agencies to ensure the provision of municipal services (i.e. water, sewer fire, etc.)*" *Id.*, emphasis added.

The Initial Study suggests that the rationale for the annexation is to give existing customers a vote. Annexation Initial Study, p. 9. LandWatch has also been advised that MCWD seeks annexation to further its objective to qualify as a Groundwater Sustainability Agency under the Sustainable Groundwater Management Act. If MCWD intends to pursue the annexation for these reasons, and since it has seen fit to defer annexation of other developable portions of the Ord Community, there is no reason that it needs to annex *any* area that is not currently developed and currently being served with water. The Initial Study indicates that the annexation would include parcels in which hundreds of addition water service hook-ups would be required or that are not currently receiving water service. Annexation Initial Study, pp. 16-17, Table 2. LandWatch's concern that MCWD not assume plenary authority over provision of water for future development without a commitment to avoid or mitigate impacts would be addressed in part if the annexation were limited to just those parcels for which MCWD is now actually providing service.

In a telephone conversation on February 16, 2018 between LandWatch and Keith Van Der Maaten, Mr. Van Der Matten indicated that restricting the area of annexation to parcels with current service may be problematic. He suggested that MCWD may feel an

obligation to provide service to areas without current water service but for which building permits or vesting subdivision maps had been issued, or even for areas without such entitlements but for which a specific plan had been approved, or even merely initiated, or even for areas for which MCWD had only provided a Water Supply Assessment. He also suggested that denial of water service to these areas might be considered a taking.

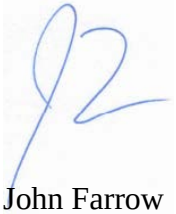
There are several response to this concern. First, MCWD's authority to deny hookups in the event of a water shortage, which clearly exists today, includes authority do deny service to proposed development for which there is an existing subdivision map. *Building Industry Assn. v. Marin Mun. Water Dist.* (1991) 235 Cal.App.3d 1641; *see also Swanson v. Marin Municipal Water Dist.* (1976) 56 Cal.App.3d 512; *San Diego County Water Authority v. Metropolitan Water Dist. of Southern California* (2004) 117 Cal.App.4th 13. Second, MCWD already plans to consider annexation of the Ord Community in phases, so there is no reason not to postpone annexation of currently undeveloped parcels until MCWD has provided adequate environmental review. Again, we note that MCWD's interests in the annexation – providing governance participation to the existing customers and facilitation of MCWD's SGMA role – can be met without annexing undeveloped parcels.

Finally, to the extent that the annexation of any of the Ord Community will provide bureaucratic momentum for MCWD to annex the rest, LandWatch opposes that annexation unless and until MCWD provides adequate environmental review of any increase in groundwater pumping to support the Ord community. At a minimum that review must include the evaluate the impacts of providing water for all of the foreseeable Ord community development as well as other cumulative projects affecting the Deep Aquifer or contributing to seawater intrusion.

LandWatch joins in the objections to the proposed annexation made by other members of the public and by public agencies. LandWatch remains willing to continue its discussions with MCWD staff to resolve its concerns with the proposed annexation. Please let us know if you would like to confer further toward that end. In the meantime, LandWatch asks that the MCWD Board not certify an inadequate CEQA document or act on the annexation at its February 20 meeting.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



John Farrow

JHF:hs

Attachment:

Timothy Parker, letter to John Farrow, re Groundwater Impacts from Increased Pumping to Support Ord Community Development, February 15, 2018

References: to be provided electronically via thumb drive

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EXHIBIT 4

AMENDMENT TO WATER/WASTEWATER FACILITIES AGREEMENT

The parties to this Amendment to Water/Wastewater Facilities Agreement ("Amendment") are the FORT ORD REUSE AUTHORITY ("FORA") and the MARINA COAST WATER DISTRICT ("MCWD"), which agree as follows:

1. Agreed Facts. The parties entered into an agreement dated March 13, 1998 and entitled "Water/Wastewater Facilities Agreement" ("Agreement"). Subsequent changes in applicable law and circumstances make it mutually beneficial for the parties to amend the Agreement to add the option of effecting the conveyance of the subject water and wastewater facilities to MCWD either through a no-cost economic development conveyance through FORA or through a public benefit conveyance through the US Department of Health and Human Services. Such an amendment will benefit both parties by potentially expediting the conveyance and providing greater flexibility in operating the facilities with greater public and economic benefit to the communities served by the parties.

2. Amendment Procedure. Paragraph 10.7 of the Agreement requires consent of the governing Boards of both parties to amend the Agreement. As with the Agreement, FORA will adopt this Amendment by ordinance and MCWD will adopt this Agreement by resolution. FORA is the lead agency for adoption of this Amendment.

3. Definitions. The definitions of words and terms in the Agreement shall control the meaning of the same words and terms used in this Amendment.

4. Amendments. The Agreement is amended as follows:

4.1 Paragraph 1.4 is amended as follows:

"EXISTING FACILITIES. The USA presently owns all existing facilities. The USA has determined to divest itself of the existing facilities. Federal law authorizes such divestiture by either a "public benefit conveyance" or a "no-cost economic development conveyance" to a local governmental entity satisfying certain criteria, which criteria are satisfied by MCWD. FORA and MCWD have formally determined that MCWD's acquisition of the existing facilities for the service area by either a public benefit conveyance or a no-cost economic development conveyance will benefit mutually the service area and the area within MCWD's jurisdictional boundaries."

4.2 Paragraph 1.5 is amended as follows:

"CONTEXT. The public health, safety and welfare of the present population of the Ft. Ord reuse area and all future population require continued operation of a water distribution system and a wastewater collection system. The U.S. Army has agreed to convey the systems pursuant to federal law and regulations. Following organization of FORA, discussions commenced with the USA regarding transfer of ownership and operation of the facilities, and FORA evolved a process to assure continuity of management and operation. FORA has been given a limited statutory life and must find reliable utility providers to assume the responsibility for system operation. The FORA

Board appointed a select committee from technical staff of its members to design a set of minimum requirements for water system operators and invited statements of qualifications from those interested. Three statements were received and referred to the same select committee for evaluation, analysis, and recommendation. After receiving the select committee's analysis and recommendation, and after providing opportunity for public input, at its meeting of October 11, 1996, the FORA Board authorized staff to commence negotiations with MCWD for the purpose of negotiating an agreement with MCWD whereby MCWD would assume the responsibility of the operation, maintenance, and ownership of the existing water (and wastewater collection) systems on the former Fort Ord. The same select committee was authorized to oversee the negotiations that were undertaken by FORA staff. Negotiations included detailed financial analyses by FORA staff/consultants and by Stone & Youngberg LLC. These analyses are very comprehensive and demonstrate MCWD's fiscal capacity. The Stone & Youngberg Financial Analysis includes provision for possible payments to FORA and various land use agencies in accordance with law. On May 9, 1997, the FORA Board authorized the staff to work with MCWD to develop an agreement regarding the systems and to prepare an application for Public Benefit Conveyance (PBC) to be filed after the FORA/MCWD agreement is authorized for execution by the FORA Board. Effective June 2, 1997, MCWD has been selected by the USA to be the interim operator of the facilities pending a full transfer. The parties anticipate that such full transfer will be by either a public benefit conveyance or a no-cost economic development conveyance pursuant to this Agreement."

4.3 The heading of Paragraph 3.1 is amended as follows:

"APPLICATION FOR PUBLIC BENEFIT CONVEYANCE OR NO-COST ECONOMIC DEVELOPMENT CONVEYANCE; PERMITS TO OPERATE."

4.4 Paragraph 3.1.1 is amended as follows:

"MCWD Responsibilities. MCWD, as lead agency, will diligently either prosecute an application to the USA for a public benefit conveyance to MCWD, or through FORA prosecute a no-cost economic development conveyance to MCWD of all of the USA's existing sewer and water facilities and appurtenances and incidental rights of access, extraction, discharge, and use for the service area. MCWD will also act diligently to obtain and maintain in good standing all permits needed to operate all such facilities."

4.5 Paragraph 3.1.2 is amended as follows:

"FORA Responsibilities. FORA will forego and forebear its rights to acquire the facilities through negotiated sale, economic development conveyance, or any other procedure permitted under law, and FORA hereby nominates and designates MCWD as the appropriate local governmental entity to acquire the facilities for the benefit of FORA, its member agencies, and the general public. FORA will support MCWD's application for conveyance of the facilities and incidental rights to MCWD through either a public benefit conveyance or a no-cost economic development conveyance.

4.6 Paragraph 7.1.4 is amended as follows:

"Payments to FORA. Upon the effective date of either a public benefit conveyance or a no-cost economic development conveyance of the facilities to MCWD, when MCWD has the ability to levy and collect rates for service through the facilities within the Service Area, MCWD will commence to pay to FORA monies determined to be due as provided in this section. The amount of MCWD's payments to FORA under this section will be included in each budget and request for change presented to FORA under section 7.1.3."

4.7 Paragraph 9.3 is amended as follows:

"TERM. This Agreement shall have a term coincident with the legal existence of FORA, unless the USA denies MCWD's application for a public benefit conveyance or MCWD's application through FORA for a no-cost economic development conveyance. If the USA denies MCWD's application for a public benefit conveyance or for a no-cost economic development conveyance, the parties shall meet and confer in good faith during the 120 days immediately following the final denial to discuss possible change in terms for MCWD to acquire, construct, operate and/or furnish the facilities. If FORA and MCWD cannot agree on new terms within the 120 days, or such other additional time as may be agreed by FORA and MCWD, this Agreement shall terminate and have no further effect, and the parties thereafter shall have no further rights or obligations under this Agreement."

5. Incorporation of Terms. This Amendment is incorporated into the Agreement by this reference, and all the provisions of the Agreement as specifically amended by this Amendment, including but not limited to execution in counterparts are incorporated in and apply to this Amendment.

IN WITNESS WHEREOF, the parties hereto, by and through their respective, duly authorized representatives, have executed this Agreement on the dates indicated.

FORT ORD REUSE AUTHORITY

By _____
Executive Officer

MARINA COAST WATER DISTRICT

By _____
President, Board of Directors

Dated: 3-2-01

ATTEST:

By _____
Secretary

WATER/WASTEWATER FACILITIES AGREEMENT

The parties to this Water/Wastewater Facilities Agreement ("Agreement") are the FORT ORD REUSE AUTHORITY and the MARINA COAST WATER DISTRICT, which agree as follows:

ARTICLE 1. AGREED FACTS

1.1. CAPACITY OF THE PARTIES. FORA is a local governmental entity and is defined as a public corporation of the State of California established by the FORA Act. MCWD is a County Water District and political subdivision of the State of California, organized under Division 12, sections 30000 and following, of the California Water Code.

1.2. AUTHORITY. FORA has authority under the FORA Act, and particularly under Government Code section 67679(a)(1), to plan for and arrange the provision of those base wide public capital facilities described in the Fort Ord Reuse Plan, including, but not limited to, sewage and water conveyance and treatment facilities to assure a reasonable transition from military ownership and operation to civilian ownership and operation, and to further the integrated future use of Fort Ord. MCWD has authority, under Water Code sections 30000 and following, and under Article 11, Section 9 of the California Constitution, to acquire, construct, operate, and furnish water and sewer facilities outside its boundaries and within the jurisdictional boundaries of a local governmental entity by agreement with the local governmental entity.

1.3. PURPOSE. The parties intend by this Agreement to establish the terms and conditions for FORA to plan and arrange for the provision of the facilities, and for MCWD to acquire, construct, operate, and furnish the facilities, to benefit mutually the service area and the area within MCWD's jurisdictional boundaries. This Agreement will govern MCWD's ownership and operation of the facilities.

1.4. EXISTING FACILITIES. The USA presently owns all existing facilities. The USA has determined to divest itself of the existing facilities. Federal law authorizes such divestiture by a "public benefit conveyance" to a local governmental entity satisfying certain criteria, which criteria are satisfied by MCWD. FORA and MCWD have formally determined that MCWD's acquisition of the existing facilities for the service area by a public benefit conveyance will benefit mutually the service area and the area within MCWD's jurisdictional boundaries.

1.5. CONTEXT. The public health, safety and welfare of the present population of the Ft. Ord reuse area and all future population require continued operation of a water distribution system and a wastewater collection system. The

U.S. Army has agreed to convey the systems pursuant to federal law and regulations. Following organization of FORA, discussions commenced with the USA regarding transfer of ownership and operation of the facilities, and FORA evolved a process to assure continuity of management and operation. FORA has been given a limited statutory life and must find reliable utility providers to assume the responsibility for system operation. The FORA Board appointed a select committee from technical staff of its members to design a set of minimum requirements for water system operators and invited statements of qualifications from those interested. Three statements were received and referred to the same select committee for evaluation, analysis, and recommendation. After receiving the select committee's analysis and recommendation, and after providing opportunity for public input, at its meeting of October 11, 1996, the FORA Board authorized staff to commence negotiations with MCWD for the purpose of negotiating an agreement with MCWD whereby MCWD would assume the responsibility of the operation, maintenance, and ownership of the existing water (and wastewater collection) systems on the former Fort Ord. The same select committee was authorized to oversee the negotiations that were undertaken by FORA staff. Negotiations included detailed financial analyses by FORA staff/consultants and by Stone & Youngberg LLC. These analyses are very comprehensive and demonstrate MCWD's fiscal capacity. The Stone & Youngberg Financial Analysis includes provision for possible payments to FORA and various land use agencies in accordance with law. On May 9, 1997, the FORA Board authorized the staff to work with MCWD to develop an agreement regarding the systems and to prepare an application for Public Benefit Conveyance (PBC) to be filed after the FORA/MCWD agreement is authorized for execution by the FORA Board. Effective June 2, 1997, MCWD has been selected by the USA to be the interim operator of the facilities pending a full transfer. The parties anticipate that such full transfer will be by public benefit conveyance pursuant to this Agreement.

1.6. WATER SUPPLY CAPACITY RIGHTS. The FORA Board has previously adopted a comprehensive plan for the administration of groundwater extraction rights consistent with the Agreement between the USA and the Monterey County Water Resources Agency dated September 1993. It is anticipated this plan may be amended from time to time at the sole discretion of the FORA Board. The total volume of groundwater available for this plan is 6,600 acre feet per year.

1.7. LEAD AGENCY. FORA is the lead agency for the adoption of this Agreement.

ARTICLE 2. DEFINITIONS AND ATTACHMENTS

2.1. **"Committee"** means the Water/Wastewater Oversight Committee appointed by the FORA Board to oversee the provision of water and wastewater collection services by MCWD under this Agreement.

2.2. **"Facilities"** means the public capital facilities used to provide water and wastewater collection services on the service area, including appurtenances and incidental rights of access, extraction, discharge, and use. Sewage (herein also called "sewer" and "wastewater") and water public capital facilities existing as of the date of this Agreement are generally shown on Exhibits A and B to this Agreement. Public capital facilities are those on MCWD's side of the service connection, including the meter for water service. For sewer facilities, the service connection is at the tap into the main collection system, wherever located, as determined by MCWD.

2.3. **"FORA"** means Fort Ord Reuse Authority.

2.4. **"FORA Act"** means the Fort Ord Reuse Authority Act codified in Title 7.85, sections 67650 and following, of the California Government Code, as may be amended from time to time.

2.5. **"MCWD"** means Marina Coast Water District.

2.6. **"Service Area"** means the former Fort Ord Army base in northwestern Monterey County, California. The service area is shown generally on the diagram attached to this Agreement as Exhibit A.

2.7. **"USA"** means the United States of America represented by the Department of the Army.

2.8. **Attachments to this Agreement:**

EXHIBIT "A":	Diagram of Fort Ord Water System/Service Area, Schaaf & Wheeler, April 1994
EXHIBIT "B":	Diagram of Fort Ord Wastewater System/Service Area, FORIS, undated
EXHIBIT "C":	Mediators
EXHIBIT "D":	Gov. Code §§ 54980-54983, 67679(a)(1)
EXHIBIT "E":	Pub. Util. Code §§ 10101, 10102, 10103, 10104 and 10105

ARTICLE 3. FACILITIES ACQUISITION AND OWNERSHIP

3.1. APPLICATION FOR PUBLIC BENEFIT CONVEYANCE; PERMITS TO OPERATE.

3.1.1. MCWD Responsibilities. MCWD, as lead agency, will diligently prosecute an application to the USA for a public benefit conveyance to MCWD of all of the USA's existing sewer and water facilities and appurtenances and incidental rights of access, extraction, discharge, and use for the service area. MCWD will also act diligently to obtain and maintain in good standing all permits needed to operate all such facilities.

3.1.2. FORA Responsibilities. FORA will forego and forebear its rights to acquire the facilities through negotiated sale, economic development conveyance, or any other procedure permitted under law, and FORA hereby nominates and designates MCWD as the appropriate local governmental entity to acquire the facilities for the benefit of FORA, its member agencies, and the general public. FORA will support MCWD's application for a public benefit conveyance.

3.1.3. Joint Responsibilities. MCWD and FORA will diligently take such actions and execute such documents as either considers necessary for MCWD to obtain and confirm all rights in and to the existing wastewater and water facilities and appurtenances and incidental rights of access, extraction, discharge, and use.

3.2. ADDITIONAL FACILITIES.

3.2.1. MCWD Responsibilities. MCWD will cause to be planned, designed and constructed such additional water and sewer facilities as FORA, in consultation with MCWD, reasonably determines are necessary for the service area. MCWD may cause to be planned, designed and constructed any other facilities as MCWD reasonably determines will carry out the purpose of this agreement as expressed in section 1.3 of this Agreement.

3.2.2. FORA Responsibilities. FORA will determine in consultation with MCWD, based on recommendations from the Committee, what additional facilities are necessary for the service area.

3.3. TRANSFER, OBLIGATION, AND ENCUMBRANCE OF FACILITIES. Any transfer, obligation, or encumbrance of any interest in the facilities shall require the prior written approval of both parties.

3.4. ESTABLISHMENT OF WATER AND SEWER CAPACITY RIGHTS.

3.4.1. MCWD Responsibilities. MCWD shall have no responsibility for establishment and administration of water extraction capacity rights and

wastewater discharge and treatment capacity rights, except to compensate FORA for such administration.

3.4.2. FORA Responsibilities. The FORA Board will administer all extraction and discharge rights which may be obtained from the USA, pursuant to the comprehensive plan previously adopted by FORA and such changes as may be made to the plan from time to time by the FORA Board.

3.5. GRANT LOCAL SHARE. MCWD shall assume and pay the local share of any federal or state grant made to improve, maintain or add to the facilities. Any such obligation shall be a reimbursable cost under section 7.1.2 of this Agreement.

ARTICLE 4. OVERSIGHT

4.1. MCWD RESPONSIBILITIES. MCWD shall own and operate the facilities under the oversight and with the approvals and authorizations of FORA and the Committee as provided in this Agreement. MCWD shall cooperate with FORA and the Committee, and shall provide such information to the Committee as reasonably requested by the Committee, including but not limited to the reports enumerated in section 4.2.3 of this Agreement.

4.2. FORA RESPONSIBILITIES.

4.2.1. Committee Appointment. A Water/Wastewater Oversight Committee will be appointed by the FORA Board from appropriate agency staff members who will serve at the pleasure of the Board. The Committee will include representatives from the future land use jurisdictions and the two Universities (Cities of Marina, Seaside, Monterey, Del Rey Oaks, the County of Monterey, CSUMB and UCMBEST), for a total of seven members (see attachment).

4.2.2. Committee Role. The Committee shall be advisory to the FORA Board and shall have the following functions:

4.2.2.1. Receive recommendations regarding operation of the facilities.

4.2.2.2. Advise the FORA Board and staff on appropriate action regarding such recommendations.

4.2.2.3. Review and recommend on operating and capital improvement budgets.

4.2.2.4. Periodically review and recommend a master plan of public sewer and water facilities.

4.2.2.5. Make recommendations pursuant to Article 7 of this Agreement, including recommendations regarding allocation of costs over benefitted properties.

4.2.2.6. Confirm adequacy of services provided.

4.2.2.7. Review the annual financial statement and MCWD audit to affirm that results achieved comport with expectations of FORA.

4.2.2.8. Evaluate annually the performance of MCWD in accordance with this Agreement.

4.2.2.9. Advise on short and long term financial planning and fiscal management.

4.2.2.10. Assure that the facilities are complimenting implementation of the reuse plan.

4.2.3. Evaluation Criteria. The Committee will use the following criteria in evaluating MCWD's performance under this Agreement:

4.2.3.1. Timely development annually of operation and capital budgets.

4.2.3.2. Timely and accurate quarterly and annual financial reports.

4.2.3.3. Timely and accurate quarterly and annual operational reports.

4.2.3.4. Customer service orientation and MCWD's responsiveness to customer concerns, as shown in quarterly and annual reports of customer communications and responses.

ARTICLE 5. FACILITIES OPERATION

5.1. MCWD RESPONSIBILITIES.

5.1.1. Operation. MCWD will operate the facilities in accordance with applicable laws, rules and regulations, and policies established by the MCWD Board and the FORA Board, and procedures adopted by MCWD staff after

consultation with the Committee. Unless this Agreement or any policy or procedure established pursuant to this Agreement provides otherwise, MCWD will operate the facilities in the same manner as MCWD operates similar facilities for other areas served by MCWD.

5.1.2. Communication and Reports. MCWD will communicate regularly with the Committee about the operation of the facilities, and will respond promptly to communications from FORA and the Committee. MCWD will deliver quarterly and annual operational reports to the Committee.

5.1.3. Complaints. Complaints about MCWD's operation of the facilities will be dealt with in the first instance by MCWD's General Manager or designee. Decisions of the General Manager or designee may be appealed to the FORA Board in the same manner that decisions within the boundaries of MCWD are appealed to MCWD's Board. The decision of the FORA Board on complaints will be final and will exhaust all administrative remedies.

5.1.4. Interconnection With MCWD Facilities. Interconnections currently exist between the facilities and MCWD's facilities. MCWD may improve interconnections between MCWD's facilities and the facilities, to provide for enhanced, conjunctive and concurrent use of all system facilities to serve the service area and other areas served by MCWD.

5.2. FORA RESPONSIBILITIES. FORA will cooperate with MCWD to establish policies for the operation and administration of the facilities and to facilitate operation and administration of the facilities to achieve the purpose of this Agreement as stated in section 2.3 of this Agreement. FORA will respond promptly to communications from MCWD about operation of the facilities. The FORA Board will deal promptly with appeals of complaints about MCWD's operation of the facilities.

5.3. JOINT RESPONSIBILITIES.

5.3.1. Groundwater Use. The parties will cooperate on MCWD's increased withdrawal of potable groundwater from MCWD's existing wells in the 900-foot aquifer by up to 1,400 acre-feet per year (afy), in compliance with law, to enable the increased withdrawals from 5,200 afy to 6,600 afy for use in the service area, as stipulated in paragraph 4.c. of the September 1993 Agreement between The United States of America and the Monterey County Water Resources Agency, and in paragraph 5.1.1.1 of the "Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands," recorded August 7, 1996, in Reel 3404 Page 749, in the Office of the Monterey County Recorder.

5.3.2. Groundwater Management. The parties will cooperate to further the conservation, management and protection of groundwater underlying the service area and groundwater used on the service area.

5.3.3. Recycled Water. The parties will cooperate to further the use of recycled, reused and reclaimed water and stormwater.

5.4. AGREEMENT ADMINISTRATION. The following persons or their designated representatives shall be the contact persons for the parties and shall administer this Agreement:

Executive Officer of FORA
FORA
100 12th Street, Bldg 2880
Marina, CA 93933

General Manager of MCWD
MCWD
200 12th Street, Bldg. 2788
Marina, CA 93933

ARTICLE 6. EX OFFICIO MEMBERSHIP

6.1. MCWD Responsibilities. Close cooperation and communication between FORA and MCWD being vital to the successful implementation of this Agreement, upon execution of this Agreement and payment of the membership fees described in Article 7 of this Agreement, MCWD will become an ex officio member of FORA under applicable provisions of the FORA Act, with all of the rights and obligations of an ex officio member.

6.2. FORA Responsibilities. Upon execution of this Agreement and payment of the membership fees described in Article 7 of this Agreement, FORA will enroll MCWD as an ex officio member of FORA pursuant to the FORA Act, with all of the rights and obligations of an ex officio member.

ARTICLE 7. FINANCIAL PROVISIONS

7.1. MCWD RESPONSIBILITIES

7.1.1. Separate Fund Accounting. MCWD will account for its operations for the service area as a separate fund within the general MCWD operation. The service area fund will have its own line items and account numbers, and will give MCWD the ability to report on revenues and expenses for the service area. Rules for allocating overhead between the service area fund and other MCWD operations will be determined based on the principles set forth in Circular A-87, Cost Principles for State and Local Governments, of the federal Office of Management and Budget.

7.1.2. MCWD Will Recover Costs. MCWD will recover all of its direct and indirect, short term and long term costs of furnishing the facilities to the service area. MCWD shall not be required to take any action in connection with furnishing the facilities to the service area unless and until a source of funds is secured from the service area to pay in full in a reasonable manner consistent with normal accounting practices all of MCWD's direct and indirect, short term and long term costs of the action to be taken by MCWD, including costs of administration, operation, maintenance and capital improvements to provide adequate system capacity to meet existing and anticipated service demands.

7.1.3. Budgets and Compensation Plans.

7.1.3.1. Proposed Budgets. MCWD's General Manager shall submit a proposed budget to the Committee within four months after conveyance of the existing facilities from the USA to MCWD, and shall submit subsequent proposed budgets by March 30 of each year. Each budget shall contain an action budget for one year, from July 1 through June 30, and an operational planning budget for an additional year, and a five-year capital improvement planning budget, updated annually. Each budget shall provide for sufficient revenues to pay MCWD's direct and indirect, short-term and long-term costs to furnish the facilities to the service area for the two years covered by the action budget and the planning budget.

7.1.3.2. Request for Change. MCWD may at any time submit a written request to FORA for recommended changes in compensation. The request shall state in detail the reasons for the request and the amount of change requested.

7.1.3.3. MCWD Board Action. Not less than two weeks nor more than four weeks after receiving FORA's response pursuant to section 7.2, MCWD's governing Board shall act on the response. MCWD's Board may adopt the proposal with FORA's recommended changes, or may refer the matter to mediation as provided in section 10.1 of this Agreement.

7.1.3.4. Term of Adopted Plan. Each adopted compensation plan shall remain in effect until a new plan is adopted.

7.1.4. Payments to FORA. Upon the effective date of a public benefit conveyance of the facilities to MCWD, when MCWD has the ability to levy and collect rates for service through the facilities within the Service Area, MCWD will commence to pay to FORA monies determined to be due as provided in this section. The amount of MCWD's payments to FORA under this section will be included in each budget and request for change presented to FORA under section 7.1.3.

7.1.4.1. MCWD will pay for FORA's administrative and liaison services incurred by FORA in the management and operation of the facilities and the administration of this Agreement.

7.1.4.2. MCWD will pay to FORA an amount equal to five percent (5%) of all revenues derived, earned, or paid to MCWD for any purpose from customers of MCWD or users of water, within the Service Area, to partially compensate FORA for its forbearance pursuant to section 3.1.2 of this Agreement.

7.1.4.3. MCWD will pay any sum due to FORA under any agreement with FORA which may be required under the provisions of sections 10101 and following of the California Public Utilities Code, and sections 54980 and following of the California Government Code.

7.1.4.4. MCWD will pay the fair market value of any interest in property purchased from FORA.

7.1.4.5. MCWD will pay an annual fee for membership on the FORA Board of Directors as an ex-officio member in an amount as the FORA Board may establish by resolution. MCWD acknowledges that MCWD's annual fee for such ex-officio membership may exceed the amount paid by other ex-officio members. The annual fee to be paid by MCWD will not exceed one percent (1%) of all revenues, derived, earned, or paid to MCWD for any purpose from customers of MCWD or users of water within the service area.

7.1.4.6. In the event FORA enters into an agreement with Monterey County or any city which has jurisdiction over a portion of the service area, for the division of revenues derived from the sales of water by MCWD within the jurisdiction of the County or city, the amounts specified in Section 7.1.4.2 of this Agreement shall be reduced by the amount FORA receives pursuant to such agreements for the division of revenues.

7.1.5. MCWD's Financial Authority. MCWD may exercise any authority available to MCWD under law and this Agreement to finance MCWD's operations for the service area.

7.1.6. Defense of Financial Plans. MCWD, at MCWD's cost, shall defend all financial plans adopted and financial actions taken by MCWD and FORA by or pursuant to this Agreement. MCWD may file and prosecute a validating action if authorized by law for any such plan.

7.2. FORA RESPONSIBILITIES.

7.2.1. FORA shall respond to MCWD within three months after receiving a proposed budget or a written request or a referral for further response pursuant to section 7.1.3. FORA's response shall state whether FORA agrees with the proposed budget or written request. If FORA does not agree, FORA's response shall identify each disputed element, shall state detailed reasons for the dispute, and shall specify a resolution acceptable to FORA. If FORA does not respond within three

months, the compensation plan contained in the latest submittal from MCWD shall be deemed adopted.

7.2.2. Nothing in this Agreement shall limit or impair FORA's ability to contract or arrange financing for construction of capital facilities.

7.3. JOINT RESPONSIBILITIES.

7.3.1. MCWD's Board shall adopt by resolution and FORA's Board shall adopt by ordinance, as a supplement to this Agreement, each compensation plan for MCWD determined pursuant to sections 7.1.3 and 7.2.1 of this Agreement.

7.3.2. MCWD and FORA will cooperate in reviewing and working with communications and proposals from other municipal corporations pursuant to sections 10100 and following of the Public Utilities Code and any other provisions of law dealing with water and sewer utility franchises, with the use of the public streets, ways, alleys, and places within the other municipal corporations for the provision of water and sewer services, or with compensation to a municipal corporation for services performed for another municipal or public corporation.

7.3.3. If MCWD makes any payments to another municipal corporation the amount of such payments shall reduce any sums which such municipal corporation would otherwise receive from sales pursuant to Title 7.85 of the Government Code.

ARTICLE 8. RISK MANAGEMENT

8.1. RISK OF LOSS. Except as otherwise provided in this Agreement, MCWD shall bear the risk of loss from its provision of services to the service area, to the same extent and in the same manner and subject to the same limitations as with MCWD's activities within the area from which MCWD's Directors are elected. This Agreement is not intended and shall not be construed to remove any protection from liability or any procedures for claiming liability under state and federal law. Allocation of the risk from defective or inadequate facilities shall be determined in the conveyance of the facilities from the USA. To the fullest extent permitted by law, MCWD's facilities and other assets for providing water and sewer services within its jurisdictional boundaries shall not be at risk from claims based on MCWD's owning, operating, and furnishing the facilities within the service area. MCWD's risk and liability for MCWD's activities for the service area shall be limited to the value of any facilities within or for the service area, the assets in any service area accounts, and the value of insurance carried by MCWD for providing services within the service area. MCWD, with FORA's assistance, shall diligently apply for and attempt to obtain any all state and federal assistance that is available in the event of catastrophic losses to the facilities.

8.2. INSURANCE. Throughout the term of this Agreement MCWD shall maintain insurance with coverage and limits equivalent to that maintained for MCWD's operations within its jurisdictional boundaries. The insurance shall cover the members of the Committee and shall name FORA as an additional insured.

8.3. COST OF RISK. Each compensation plan adopted for MCWD pursuant to Article 7 of this Agreement shall be adequate to pay MCWD's cost of insurance for acquiring, constructing, operating and furnishing the facilities for the service area, and to establish a prudent risk reserve for uninsured risks.

ARTICLE 9. EFFECTIVE DATE AND TERM

9.1. EFFECTIVE DATE. This Agreement shall become effective when FORA and MCWD have each executed this Agreement.

9.2. FORMAL ADOPTION. FORA will adopt this Agreement by ordinance. MCWD will adopt this Agreement by resolution.

9.3. TERM. This Agreement shall have a term coincident with the legal existence of FORA, unless the USA denies MCWD's application for a public benefit conveyance. If the USA denies MCWD's application for a public benefit conveyance, the parties shall meet and confer in good faith during the 120 days immediately following the final denial to discuss possible change in terms for MCWD to acquire, construct, operate and/or furnish the facilities. If FORA and MCWD cannot agree on new terms within the 120 days, or such other additional time as may be agreed by FORA and MCWD, this Agreement shall terminate and have no further effect, and the parties thereafter shall have no further rights or obligations under this Agreement.

9.4. EFFECT OF TERMINATION. Upon termination of this Agreement, unless otherwise provided by this Agreement or by law or by further agreement of FORA and MCWD or their successors, MCWD shall own the facilities free and clear of the terms and conditions of this Agreement.

ARTICLE 10. GENERAL PROVISIONS

10.1. DISPUTE RESOLUTION PROCEDURE.

10.1.1. Meet and Confer; Mediation. This section shall apply to all disputes arising under this Agreement. The Agreement Administrators designated under section 5.4 of this Agreement shall first meet and confer to resolve any dispute. Each party shall make all reasonable efforts to provide to the other party all information relevant to the dispute. If the Agreement Administrators cannot resolve the dispute within ten working days from the date of the dispute, they shall meet and

confer together with the Committee. If the dispute is not resolved within another ten working days from the date of the dispute, the Agreement Administrators shall meet and confer together with a voting member of the FORA Board and a member of the MCWD Board. If the dispute is not resolved within another ten days from the date of the dispute, the parties shall mediate the dispute at the earliest possible date, with one of the persons named on Exhibit "C" to this Agreement serving as mediator. If the dispute is still not resolved, the parties may pursue any and all remedies available to them at law and equity, including declaratory relief which shall be binding on the parties.

10.1.2. Provisional Relief Available. The requirement to use the procedure specified in section 10.1.1 of this Agreement shall not prevent a party from seeking provisional relief from a court if necessary to protect the public health or safety.

10.1.3. Mediator List. Exhibit "C" to this Agreement is a list of persons both parties will accept as mediators for any dispute arising under this Agreement. If a dispute requires mediation, the parties will choose a mediator from the list by some random method, and will continue to do so until a mediator is selected who can mediate the particular dispute without delay. As a last resort, if no person named on Exhibit "C" can mediate a particular dispute without delay, the parties will ask the Presiding Judge of the Monterey County Superior Court to appoint a mediator.

10.2. WAIVER OF RIGHTS. None of the covenants or agreements herein contained can be waived except by the written consent of the waiving party.

10.3. SEVERABILITY. If any one or more of the covenants or agreements set forth in this Agreement on the part of the parties, or either of them, to be performed should be contrary to any provision of law or contrary to the policy of law to such extent as to be unenforceable in any court of competent jurisdiction, then such covenant or covenants, agreement or agreements, shall be null and void and shall be deemed separable from the remaining covenants and agreements and shall in no way affect the validity of this Agreement.

10.4. EXHIBITS. All exhibits referred to in this Agreement and attached to this agreement are incorporated in this Agreement by reference.

10.5. COUNTERPARTS. This Agreement may be executed in counterparts, and each fully executed counterpart shall be deemed an original document.

10.6. NOTICES. All notices, requests, consents, approvals, authorizations, agreements, or appointments hereunder shall be given in writing and addressed to the principal office of each party.

10.7. AMENDMENTS. This Agreement integrates and supersedes all prior and contemporaneous agreements and understandings about MCWD's provision of the services to the Service Areas. This Agreement may not be amended without consent of the governing Boards of both parties.

10.8. SUCCESSORS. This Agreement shall bind and benefit the successors of the parties hereto.

10.9. ADDITIONAL DOCUMENTS. The parties hereto agree, upon request, to execute, acknowledge, and deliver all additional documents necessary to carry out the intent of this Agreement.

10.10.CAPTIONS. Captions of the Articles, Sections, and Paragraphs of this Agreement are for convenience and reference only and are not intended to define or limit the scope of any provision contained herein.

IN WITNESS WHEREOF, the parties hereto, by and through their respective, duly authorized representatives, have executed this Agreement on the dates indicated.

FORT ORD REUSE AUTHORITY

By _____
Chairperson, Board of Directors

ATTEST:

By _____
Secretary

Dated: 3/13/98

MARINA COAST WATER DISTRICT

By _____
President, Board of Directors

ATTEST:

By _____
Secretary

Dated: 3/13/98

ORDINANCE NO. 98-01

AN ORDINANCE OF BOARD OF DIRECTORS OF THE FORT ORD REUSE AUTHORITY APPROVING AN AGREEMENT BETWEEN MARINA COAST WATER DISTRICT AND THE FORT ORD REUSE AUTHORITY

The Board of Directors of the Fort Ord Reuse Authority ordains as follows:

SECTION 1. The Board of Directors of the Fort Ord Reuse Authority approves an Agreement between Marina Coast Water District and the Fort Ord Reuse Authority for the operation of water and wastewater collection systems on the former Fort Ord military reservation.

SECTION 2. This ordinance shall become effective on its adoption.

PASSED AND ADOPTED this 13th day of February, 1998 by the following vote:

AYES: Barlich, Albert, Vocelka, Potter, Perkins, Johnsen Jordan, Mancini, Pendergrass, Styles, Koffman, White

NOES: Perrine

ABSENT: None

Chair of the Board of Directors

ATTEST:

Michael Houlemard
Clerk of the Board

By _____
Deputy

F:\MSOFFICE\MHSHARE\MCWDORD.DOC

EXHIBIT A

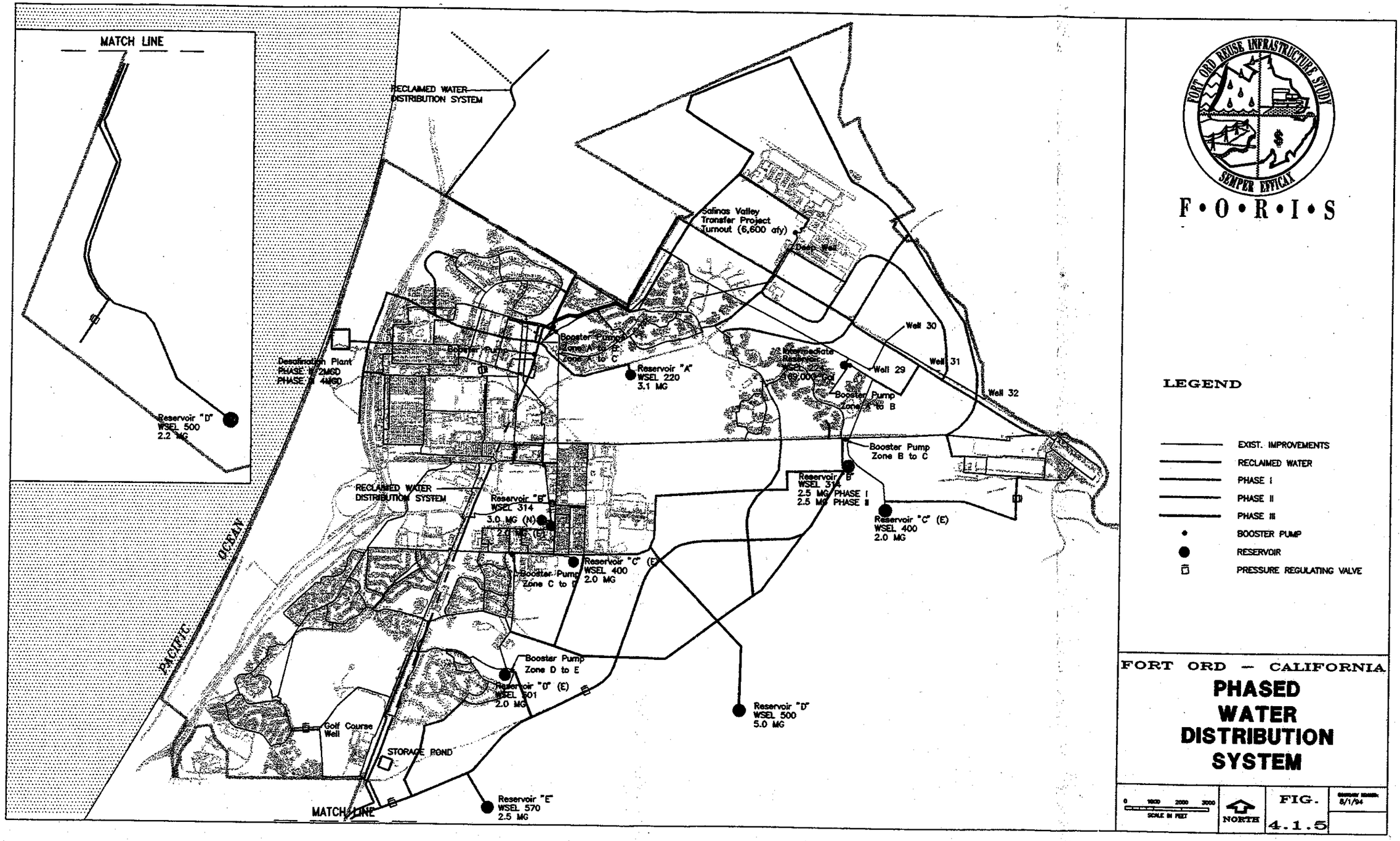
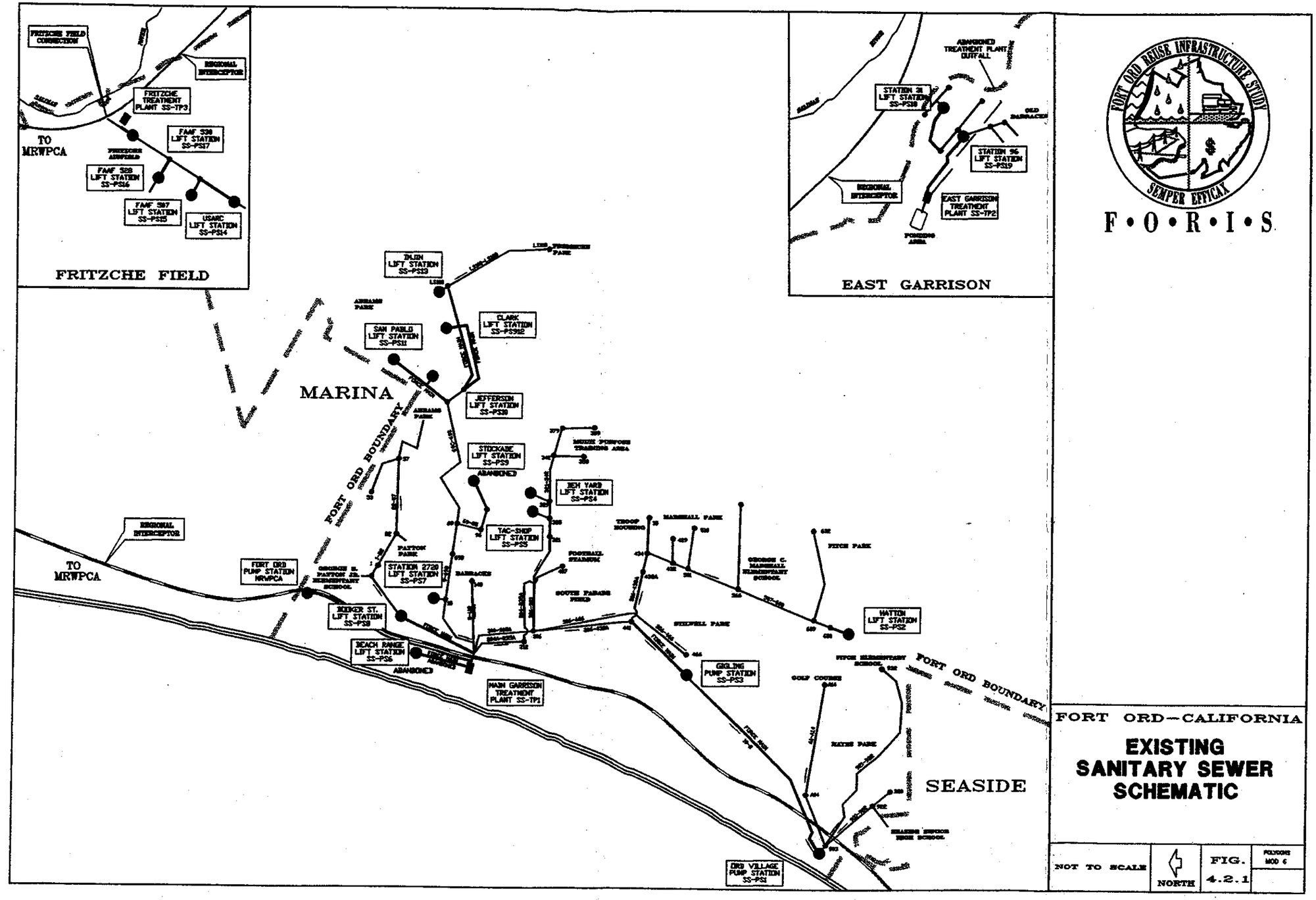

MATCH LINE
RECLAIMED WATER DISTRIBUTION SYSTEM
Salinas Valley Transfer Project Turnout (6,600 afy)
Desalination Plant PHASE II 2MGD PHASE III 4MGD
Booster Pump
Booster Pumps Zone A to B, Zone B to C
Reservoir "A" WSEL 220 3.1 MG
Intermediate Reservoir WSEL 220 @ 000 MG
Well 29
Well 30
Well 31
Well 32
Booster Pump Zone B to B
Booster Pump Zone B to C
Reservoir "B" WSEL 314 2.5 MG PHASE I 2.5 MG PHASE II
Reservoir "C" (E) WSEL 400 2.0 MG
RECLAIMED WATER DISTRIBUTION SYSTEM
Reservoir "B" WSEL 314 3.0 MG (N) 2.0 MG (E)
Reservoir "C" (E) WSEL 400 2.0 MG
Booster Pump Zone C to D
Booster Pump Zone D to E
Reservoir "D" (E) WSEL 501 2.0 MG
Reservoir "D" WSEL 500 5.0 MG
Reservoir "D" WSEL 500 2.2 MG
Golf Course Well
STORAGE POND
Reservoir "E" WSEL 570 2.5 MG
MATCH LINE
PACIFIC OCEAN
FORT ORD REUSE INFRASTRUCTURE STUDY
SEMPER EFFICAX
F • O • R • I • S
LEGEND
EXIST. IMPROVEMENTS
RECLAIMED WATER
PHASE I
PHASE II
PHASE III
BOOSTER PUMP
RESERVOIR
PRESSURE REGULATING VALVE
FORT ORD — CALIFORNIA
PHASED WATER DISTRIBUTION SYSTEM
0 1000 2000 3000
SCALE IN FEET
NORTH
FIG. 4.1.5
8/1/94

EXHIBIT B



F•O•R•I•S

FORT ORD—CALIFORNIA

EXISTING SANITARY SEWER SCHEMATIC

NOT TO SCALE	NORTH	FIG. 4.2.1	PLYDOCS MOD 6

EXHIBIT C
MEDIATORS

Dick Milbrodt
Leon Panetta
Lt. Gen. Ret. James Moore
Don Owen
Frank Dimick
John Gregg
Anne Schneider

Chapter 12, added as Chapter 11, Municipal Services and Functions, by Stats.1978, c. 960, p. 2961, § 1, was renumbered Chapter 12 and amended by Stats.1980, c. 676, § 131.

§ 54980. Definitions

As used in this chapter:

(a) "Legislative body" means the board of supervisors in the case of a county or a city and county, the city council or board of trustees in the case of a city, and the board of directors or other governing body in the case of a district.

(b) "Local agency" means any county, city, city and county, or public district which provides or has authority to provide or perform municipal services or functions.

(c) "Municipal services or functions" includes, but is not limited to, firefighting, police, ambulance, utility services, and the improvement, maintenance, repair, and operation of streets and highways.

(Added by Stats.1978, c. 960, p. 2121, § 1.)

Historical and Statutory Notes

Former § 54980, added by Stats.1957, c. 1382, p. 2716, § 1, relating to district boundaries, was repealed by Stats.1965, c. 2043, p. 4736, § 34. See Government Code § 56000 et seq.

Forms

See West's California Code Forms, Government.

Law Review and Journal Commentaries

Decline of emergency medical services coordination in California: Why cities are at war with counties over illusory ambulance monopolies. Byron K. Toma, 23 Sw.U.L.Rev. 285 (1994).

Library References

Municipal Corporations ⇐226.
WESTLAW Topic No. 268.
C.J.S. Municipal Corporations § 976 et seq.

Notes of Decisions

Paramedics 1

1. Paramedics

For purposes of determining whether county's program of certifying paramedics for ambulance services was immune from antitrust liability under the state action doctrine, provision of emergency service is a traditional municipal function. Mercy-Peninsula Ambulance, Inc. v. San Mateo County, N.D.Cal.1984, 592 F.Supp. 956, affirmed 791 F.2d 755.

§ 54981. Contracts for municipal services

The legislative body of any local agency may contract with any other local agency for the performance by the latter of municipal services or functions within the territory of the former.

(Added by Stats.1978, c. 960, p. 2121, § 1.)

H

Former § 54981, added by 1382, p. 2716, § 1, relating to d aries, was repealed by Stats.196

§ 54981.7. Indian tribe tion servi

A city or county may ent county to provide fire p services for the Indian tri lands and territory adjacer be construed to alter or jurisdiction in Indian land

(Added by Stats.1996, c. 1085

§ 54982. Consideratio

Any agreement entered consideration.

(Added by Stats.1978, c. 960,

Former § 54982, added by 1382, p. 2716, § 1, relating to aries, was repealed by Stats.1

§ 54983. Constructio

Authority for entering construed as supplemen agencies to enter into ag functions and shall not b local agency to enter int or functions which it is p account limit applicable

The amendments to t shall not apply to any ag current term of any se entered into prior to tha

(Added by Stats.1978, c. 9

Former § 54983, added 1382, p. 2716, § 1, relating aries, was repealed by Stats

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y in the case of a district.
:d county, or public district
ɔrm municipal services or

is not limited to, firefight-
ıprovement, maintenance,

e Government Code § 56000 et

ıries

Toma, 23 Sw.U.L.Rev. 285

immune from antitrust liabil-
action doctrine, provision of
is a traditional municipal
'eninsula Ambulance, Inc. v.
N.D.Cal.1984, 592 F.Supp.
:.2d 755.

t with any other local
services or functions

Historical and Statutory Notes

Former § 54981, added by Stats.1957, c. 1382, p. 2716, § 1, relating to district boundaries, was repealed by Stats.1965, c. 2043, p. 4736, § 34. See Government Code § 56000 et seq.

§ 54981.7. Indian tribes; fire protection services; police or sheriff protection services

A city or county may enter into a contract with an Indian tribe for the city or county to provide fire protection services and police or sheriff protection services for the Indian tribe either solely on Indian lands, or on the Indian lands and territory adjacent to those Indian lands. Nothing in this section shall be construed to alter or affect federal Public Law 280, relating to state jurisdiction in Indian lands.

(Added by Stats.1996, c. 1085 (A.B.1762), § 1.)

§ 54982. Consideration

Any agreement entered into pursuant to this chapter shall be for valuable consideration.

(Added by Stats.1978, c. 960, p. 2121, § 1.)

Historical and Statutory Notes

Former § 54982, added by Stats.1957, c. 1382, p. 2716, § 1, relating to district boundaries, was repealed by Stats.1965, c. 2043, p. 4736, § 34. See Government Code § 56000 et seq.

§ 54983. Construction of authority granted

Authority for entering into agreements pursuant to this chapter shall be construed as supplementing existing authority for legislative bodies of local agencies to enter into agreements for the providing of municipal services and functions and shall not be construed as authorizing the legislative body of any local agency to enter into an agreement for the providing of municipal services or functions which it is prohibited to provide by law or which exceeds the force account limit applicable to the local agency contracting to receive services.

The amendments to this section which become effective January 1, 1981, shall not apply to any agreement which was made prior to that date nor to the current term of any self-renewing or renewable agreement which had been entered into prior to that date.

(Added by Stats.1978, c. 960, p. 2121, § 1. Amended by Stats.1980, c. 398, p. 781, § 1.)

Historical and Statutory Notes

Former § 54983, added by Stats.1957, c. 1382, p. 2716, § 1, relating to district boundaries, was repealed by Stats.1965, c. 2043, p. 4736, § 34. See Government Code § 56000 et seq.

of the proceeds shall be retained by the board to help finance its responsibilities for the reuse of Fort Ord, unless otherwise agreed upon by the city or county with jurisdiction over the property and the board.

(3) The board shall transfer or lease all real or personal property received pursuant to this section and which is intended for public utility use within a reasonable period of time, consistent with the orderly and economical provision of utility services to the area of Fort Ord, under terms and conditions the board may determine.

(4) Notwithstanding any other paragraph of this subdivision, the board may retain real or personal property received pursuant to this section as long as both of the following occur:

(i) The board determines that retention of the property is necessary or convenient to carrying out the authority's responsibilities pursuant to law.

(ii) The board determines that its retention of the property will not cause significant financial hardship to the city or county with jurisdiction over the property.

(c) The board may mediate and resolve conflicts between local agencies concerning the uses of federal land to be transferred for public benefit purposes or other uses.

(d) The provisions of this title shall not preclude negotiations between the federal government and any local telecommunication, water, gas, electric, or cable provider for the transfer to any * * * utility or provider of federally owned distribution systems and related facilities serving Fort Ord.

* * *(e) This title shall not be construed to limit the rights of the California State University or the University of California to acquire, hold, and use real property at Fort Ord, including locating or developing educationally related or research oriented facilities on this property.

(f) Except for property transferred to the California State University, or to the University of California, and that is used for educational or research purposes, and except for property transferred to the California Department of Parks and Recreation, all property transferred from the federal government to any user or purchaser, whether public or private, shall be used only in a manner consistent with the plan adopted or revised pursuant to Section 67675.

(Added by Stats.1994, c. 64 (S.B.899), § 1, eff. May 9, 1994. Amended by Stats.1994, c. 1169 (S.B.1600), § 2.)

Historical and Statutory Notes

1994 Legislation

The 1994 amendment of this section by c. 1169 (S.B. 1600) explicitly amended the 1994 addition of this section by c. 64 (S.B.899).

§ 67679. Basewide public capital facilities; identification; financing and construction; identification of significant local public capital facilities; construction or improvement; exceptions; assessments; financing districts; development fees

(a)(1) The board shall identify those basewide public capital facilities described in the Fort Ord Reuse Plan, including, but not limited to, roads, freeway ramps, air transportation facilities, and freight hauling and handling facilities; sewage and water conveyance and treatment facilities; school, library, and other educational facilities; and recreational facilities, that serve residents or will serve future residents of the base territory and could most efficiently or conveniently be planned, negotiated, financed, * * * constructed, or repaired, remodeled, or replaced by the board to further the integrated future use of the base. The board shall undertake to plan for and arrange the provision of those facilities, including arranging for their financing and construction or repair, remodeling, or replacement. The board may plan, design, construct, repair, remodel, or replace and finance these public capital facilities, or delegate any of those powers to one or more member agencies. Notwithstanding any other provision of law, no permit or permission of any kind from any city or county shall be required for any project undertaken by the board pursuant to this section.

(2) The board shall identify significant local public capital facilities, as distinguished from the basewide public capital facilities identified in the paragraph (1) which are described in the Fort Ord Reuse Plan. Local public capital facilities shall be the responsibility of the city or county with land use jurisdiction or the redevelopment agency if the facilities are located within an established project area and the board of the redevelopment agency determines that it will assume responsibility.

(3) The board may construct or otherwise act to improve a local public capital facility only with the consent of the city or county with land use authority over the area where the facility is or will be located.

A city or county or a local redevelopment agency may construct or otherwise act to improve a basewide public capital facility only with the consent of the board.

(b) If all or any portion of the Fritzsche Army Air Field is transferred to the City of Marina, the board shall not consider those portions of the air field that continue to be used as an airport to be basewide capital facilities, except with the consent of the legislative body of the city. If all or any portion of the two Army golf courses within the territory of Seaside are transferred to the City of Seaside, the board shall not consider those portions of the golf courses that continue in use as golf courses to be basewide capital facilities, except with the consent of the legislative body of the city.

(c) The board may seek state and federal grants and loans or other assistance to help fund public facilities.

(d) The board may, in any year, levy assessments, reassessments, or special taxes and issue bonds to finance these basewide public facilities in accordance with, and pursuant to, any of the following:

(1) The Improvement Act of 1911 (Division 7 (commencing with Section 5000) of the Streets and Highways Code).

(2) The Improvement Bond Act of 1915 (Division 10 (commencing with Section 8500) of the Streets and Highways Code).

(3) The Municipal Improvement Act of 1913 (Division 12 (commencing with Section 10000) of the Streets and Highways Code).

(4) The Benefit Assessment Act of 1982 (Chapter 6.4 (commencing with Section 54703)).

(5) The Landscape and Lighting Act of 1972 (Part 2 (commencing with Section 22500) of Division 15 of the Streets and Highways Code).

(6) The Integrated Financing District Act (Chapter 1.5 (commencing with Section 53175) of Division 2 of Title 5).

(7) The Mello-Roos Community Facilities Act of 1982 (Chapter 2.5 (commencing with Section 53311) of Part 1 of Division 2 of Title 5).

(8) The Infrastructure Financing District Act (Chapter 2.8 (commencing with Section 53395) of Division 2 of Title 5).

(9) The Marks-Roos Local Bond Pooling Act of 1985 (Article 4 (commencing with Section 6584) of Chapter 5 of Division 7 of Title 1).

(10) The Revenue Bond Act of 1941 (Chapter 6 (commencing with Section 54300) of Division 2 of Title 5).

(11) Fire suppression assessments levied pursuant to Article 3.6 (commencing with Section 50078) of Chapter 1 of Part 1 of Division 1 of Title 5.

(12) The Habitat Maintenance Funding Act (Chapter 11 (commencing with Section 2900) of Division 3 of the Fish and Game Code).

Notwithstanding any other provision of law, the board may create any of these financing districts within the area of Fort Ord to finance basewide public facilities without the consent of any city or county. In addition, until January 1, 2000, the board may, but is not obligated to create, within the area of Fort Ord, any of these financing districts which authorize financing for public services and may levy authorized assessments or special taxes in order to pass through funding for these services to the local agencies. Notwithstanding any other provision of law, no city or county with jurisdiction over any area of the base, whether now or in the future, shall create any land-based financing district or levy any assessment or tax secured by a lien on real property within the area of the base without the consent of the board, except that the city or county may create these financing districts for the purposes and subject to any financing limitations that may be specified in the capital improvement program prepared pursuant to Section 67675.

(e) The board may levy development fees on development projects within the area of the base. Any development fees shall comply with the requirements of Chapter 5 (commencing with Section 66000) of Division 1 of Title 5. No local agency shall issue any building permit for any development within the area of Fort Ord until the board has certified that all development fees that it has levied with respect to the development project have been paid or otherwise satisfied.

(Added by Stats.1994, c. 64 (S.B.899), § 1, eff. May 9, 1994. Amended by Stats.1994, c. 1169 (S.B.1600), § 3.)

EXHIBIT "E"

CALIFORNIA PUBLIC UTILITIES CODE
SELECTED SECTIONS

§ 10101. Powers of municipality

There is granted to every municipal corporation of the State the right to construct, operate, and maintain water and gas pipes, mains and conduits, electric light and power lines, telephone and telegraph lines, sewers and sewer mains, all with the necessary appurtenances, across, along, in, under, over, or upon any road, street, alley, avenue or highway, and across, under, or over any railway, canal, ditch, or flume which the route of such works intersects, crosses, or runs along, in such manner as to afford security for life and property.

§ 10102. Restoration

A municipal corporation exercising its rights under this article shall restore the road, street, alley, avenue, highway, canal, ditch, or flume so used to its former state of usefulness as nearly as may be, and shall locate its use so as to interfere as little as possible, with other existing uses of a road, street, alley, avenue, highway, canal, ditch, or flume.

§ 10103. Agreement of other municipality

Before any municipal corporation uses any street, alley, avenue, or highway within any other municipal corporation, it shall request the municipal corporation in which the street, alley, avenue, or highway is situated to agree with it upon the location of the use and the terms and conditions to which the use shall be subject.

§ 10104. Action to establish terms and conditions of use

If the two municipal corporations are unable to agree on the terms and conditions and location of a use within three months after a proposal to do so, the municipal corporation proposing to use a street, alley, avenue, or highway may bring an action in the superior court of the county in which the street, alley, avenue, or highway is situated against the other municipal corporation to have the terms and conditions and location determined. The superior court may determine and adjudicate the terms and conditions to which the use of the street, avenue, alley, or highway shall be subject, and the location thereof, and upon the making of the final judgment the municipal corporation desiring to do so may enter and use

the street, alley, avenue, or highway upon the terms and conditions and at the location specified in the judgment.

§ 10105. Unincorporated territory

A grant of authority from or agreement with another municipality is not necessary in any case where the street, alley, avenue, or highway, or portion thereof, proposed to be used is a necessary or convenient part of the route of the proposed works and at the time construction was commenced or the plans adopted was located in unincorporated territory. This section is not applicable if the street, alley, avenue, or highway, or portion thereof, was located in incorporated territory prior to May 5, 1933.

EXHIBIT 5

WATER DEMAND COMMITTEE

DISCUSSION ITEMS

2. DISCUSS PROPOSALS – WATER FOR AFFORDABLE/WORKFORCE HOUSING

Meeting Date:	**October 31, 2019**	**Budgeted:**	**N/A**
From:	**David J. Stoldt General Manager**	**Program/ Line Item No.:**	**N/A**
Prepared By:	**David J. Stoldt**	**Cost Estimate:**	**N/A**

General Counsel Approval: N/A
Committee Recommendation:
CEQA Compliance: Action does not constitute a project as defined by the California Environmental Quality Act Guidelines section 15378.

SUMMARY: At its August 2019 meeting, the Board discussed actions it might take to make available water to the jurisdictions for their housing needs during the remaining years the Cease and Desist Order remains in effect, presently estimated at two to three years. Staff was instructed to bring detailed proposals to the Water Demand Committee and then to bring that Committee's recommendations to the Technical Advisory Committee (TAC).

The concepts presented at that meeting included the following:

- Create new Allocation from accumulated conservation savings (e.g. District Ordinance 87 for CHOMP in 1997)
- Reclaim recently expired Water Use Credits
- Seek voluntary forfeiture of existing Water Use Credits
- Ease transfers between Non-Residential and Residential Water Use Credit holders
- Consider allowing financial incentives for Water Use Credit transfers
- Develop a conservation offset program
- Allow Entitlements to be designated for a general place of use, freeing up potable supply elsewhere

As a result of Ordinance 168, the District currently has nine acre-feet (AF) in the District Reserve that could be allocated at the discretion of the District Board. The concepts above would result in additional water to the District Reserve, primarily targeted to housing. Before discussing the concepts in greater detail, there are a few key policy questions that should be answered:

1. How much water is needed in the next two to three year window for housing?

2. The District should not make land use decisions, so how do we allocate water to Jurisdictions for a stated purpose, without restricting a Jurisdiction's right to make its own decisions?

3. How do we address the "bang-for-the-buck" issue of water for 100% Affordable

Housing, versus market-rate housing with a 20% or 25% affordable set-aside, versus moderate income housing, versus need for simply more housing in general?

4. If the District adopts rules to facilitate housing, the same rules may also facilitate additional Non-Residential development in some instances (as discussed in the descriptions below) – is that a desired outcome?

5. What, if any, might be the response of the State Water Resources Control Board as it relates to Condition 2 of the CDO?

The Committee should discuss these key questions.

RECOMMENDATION: Provide direction to staff on which proposals to pursue further and to convene a TAC meeting to discuss proposals and secure estimates of need.

DISCUSSION: Below, each proposal is discussed in greater detail and background provided.

1) Create new Allocation from accumulated conservation savings: Through District programs and Cal-Am rate structures the community has achieved approximately 3,000 AF of annual reductions in water demand since the CDO was enacted in 2009. The Board has the option to simply recognize these savings, in part, as a Public Water Credit allocable to the Jurisdictions for their use. There is precedent for this approach in District Ordinance 87 in 1997 (attached as **Exhibit 2-A**).

In this proposal, the District would convene the TAC, request statements of interest regarding the Jurisdictions' perceived water Allocation needs for the next 2 to 3 years, and an indication of how they may choose to use the water, if and when developed by the District. The District would develop findings that there is urgent need for the Allocation, the conservation savings are significant, the proposed Allocation is a minimal portion of the savings, that reallocation of the savings will not significantly deplete water resources or exceed legal limits on water production, and develop CEQA findings that support the determination.

2) Reclaim recently expired water credits: Water Use Credits documented for property owners who have made retrofits or other forms of permanent abandonment of Cal-Am water usage inure to the property, yet expire in 10 years. The District could slightly modify its Rules and Regulations to state that upon expiration the District may place the credits in the District Reserve for reallocation to the Jurisdictions within one to two years. To assist with the CEQA analysis, the District could consider permanent retirement of 15% of the credits to benefit environmental flows on the Carmel River. As an example, at the end of 2019, 13.47 AF of credit will expire from 146 different properties. In 2020, it is only 4.132 AF over 62 properties. This approach, in effect, says a homeowner or business owner did not utilize its right to use a credit for previously utilized water, so the District will do so.

3) Seek voluntary forfeiture of existing Water Use Credits: There are 5,092 documented Water Use Credits comprising 224.4 AF outstanding within the District that expire between 2020 and 2029. The average credit is just under 0.045 AF. Most will go unused. This concept envisions a mass mailing to credit holders with a request that they waive or forego their rights to the credit. The positively responding credits would be added to the District Reserve for reallocation.

4) Ease transfers between Non-Residential and Residential Water Use Credit holders: Presently District Rule 28 is relatively restrictive regarding transferring a Water Use Credit. The current rule allows:

- A transfer from one property to another for Commercial and Industrial users between each other, but not from Non-Residential users to Residential or vice versa.

- Non-Residential Water Use Credits may be transferred back into a Jurisdictional allocation (However, there was litigation that has slowed this process, see below.)

- Residential credits cannot be transferred.

- Each land use Jurisdiction shall act as the lead agency under CEQA for such transfers.

- Transfers may only occur within a single Jurisdiction.

- Transfers must have the approval of the local Jurisdiction.

- The District shall not approve any transfer where money or other valuable consideration has been given (and violation is a misdemeanor).

The District was sued twice in 2006 on Water Use Credit transfers in Seaside and Monterey (2.166 AF and 0.789 AF, respectively), and those amounts were even reduced by 15% for a set-aside for environmental flows on the Carmel River, as a mitigation. The District initially prevailed in Superior Court, but lost on appeal. Basically, the Court of Appeals found that that the California Environmental Quality Act (CEQA) findings must show that the cumulative impact of the transfer and future other transfers must not affect the environment. As a result, the District put the onus of CEQA review on the local jurisdictions.

The proposal would eliminate most of the restrictions cited above, allowing more free exchange. At this time, we may not be ready to allow a price-based transfer to happen, but it should be discussed. The District would need to modify its Rules & Regulations to take back responsibility for the CEQA findings and study the cumulative impacts, perhaps finding the likelihood of 5,092 Water Use Credit holders (at 0.045 AF per individual average credit, see above) joining together is minimal and the likely cumulative impacts have been mitigated. The District would also need to make a decision as to whether it would allow Residential and Non-Residential property-to-property transactions, property-to-Jurisdiction transactions, or instead should have all Water Use Credit transfers return back to the District Reserve.

Of note is that this approach could also facilitate commercial development through the use of transfers.

5) Consider allowing financial incentives for Water Use Credit transfers: See above. It is not staff's recommendation to pursue this proposal at this time. However, the District's Entitlement ordinances have created local markets for access to water at $240,000 to $250,000 per AF, hence it not a stretch to consider allowing arm's-length negotiated sale transactions of Water Use Credits.

6) Develop a conservation offset program: In 2018, the Water Demand Committee directed staff

to begin to determine basic provisions of a water conservation offset program. An offset program would allow a developer of a proposed project in a Jurisdiction where an Allocation of water is unavailable to invest in conservation savings elsewhere and use the credit created to "offset" the required water for the proposed development. At the meeting, the Committee stated its preference for a program where actual savings will occur, rather than paying into a mitigation bank to help pay for programs by the District to occur sometime in the future.

Several communities have water conservation offset policies. In fact, the District has envisioned such a program in its Rule 24. Section E of Rule 24 covers "Special Circumstances" and subsection 6.k. states what is expected of a developer if a project fails to stay under its calculated Water Use Capacity limit: *"Water use will be reviewed annually after occupancy. If actual water use exceeds the preliminary Water Use Capacity estimate during any annual review, the District will debit the Jurisdiction's Allocation for the difference. At the end of the monitoring period, if the average annual water use exceeds the preliminary Water Use Capacity estimate, the District will determine whether the Jurisdiction shall transfer some of its Allocation to the Project, or* ***whether the Applicant shall pay the cost of District-approved water conservation projects within the District or on the Project Site to establish Water Use Credits to offset the increased increment of water needed by the Project****."* (emphasis added) To date, the District has not formalized a process for how it would approve such projects.

It is not staff's recommendation to pursue this proposal at this time.

7) Allow Entitlements to be designated for a general place of use, freeing up Potable supply elsewhere: Presently, all District approved Entitlement programs allow locally created water supplies to offset and "free-up" Cal-Am water to be used on new development. Examples include the Pebble Beach Reclamation Project, Sand City desalination, and the Pacific Grove Local Water Project, among others. This proposal would be to allow the District to separate the water entitlement from a particular Parcel within the Entitlement's place of use and allow the District to simply designate that the purchased Entitlement is being used to meet general customer demand within the designated place of use, with no Parcel designation. The District would also declare a like amount of water is therefore "freed-up" within the Cal-Am system and could be made available to a Jurisdiction.

This approach would likely require a developer to become a buyer of an Entitlement, which may not be economically viable for Affordable Housing, but could foster market rate housing proposals and/or downtown revitalization projects.

EXHIBITS:

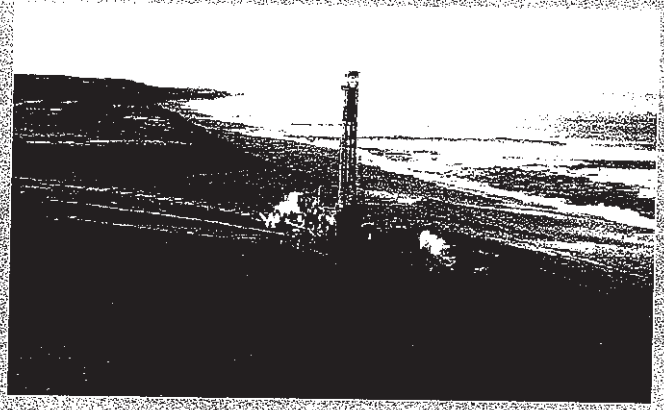
Exhibit 2-A: Ordinance No. 87 (1997)

EXHIBIT 6

[provided in separate file]

Marina Coast Water District

Deep Aquifer Investigative Study



WRIME Water Resources & Information Management Engineering, Inc.

May 2003

WRIME Water Resources & Information Management Engineering, Inc.

tel. 916.564.2236 1451 River Park Drive, Suite 142, Sacramento, CA 95815
fax 916.564.1639 http://www.wrime.com

May 15, 2003

Marina Coast Water District
11 Reservation Road
Marina, CA 93933

Attn: Mr. Dave Meza

Subject: Deep Aquifer Investigative Study

Dear Mr. Meza:

WRIME, Inc. is pleased to submit the final report on "Deep Aquifer Investigative Study" to the Marina Coast Water District (MCWD).

WRIME, Inc. appreciates having this opportunity to work with the MCWD staff, the Technical Advisory Committee members and the DWR, to evaluate the feasibility of the Deep Aquifer as a short-term and long-term source of water supply to the MCWD.

Should you have any questions, please do not hesitate to contact us about this report.

Sincerely,

Water Resources &
Information Management Engineering, Inc.

Ali Taghavi, Ph.D., P.E.
Vice President

DISCLAIMER

This report was prepared for the Marina Coast Water District under a grant from the California Department of Water Resources. The in-progress findings were shared on two occasions with a Technical Advisory Committee (TAC) consisting of agency personnel (MPWMD, USGS, PVWMA, MCWRA, Santa Cruz County Public Works, DWR) and selected consultants. At the TAC meetings, input was solicited and the subsequent suggestions were incorporated, as appropriate, into the project. Scheduling of TAC meetings was difficult and consequently some TAC members had less-than-adequate time to fully review and evaluate the work performed. As such, the findings of this report are not necessarily endorsed by all members of the TAC. The findings provide new insights into the water resources of the area, insights that are in some ways contradictory with previous beliefs. The findings are considered preliminary and subject to further refinement, and are in no sense final.

Deep Aquifer Investigative Study

May 2003

Prepared For:

Marina Coast Water District

List of Preparers:

Ali Taghavi, Ph.D., P.E.

Martin Feeney, C.H.G.

Lew Rosenberg, R.G., C.E.G.

Christopher Smith, P.E.

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SECTION 1 INTRODUCTION

The Marina Coast Water District (MCWD) in cooperation with the California Department of Water Resources (DWR) initiated an investigative study of the Salinas groundwater basin deep aquifer system.

The potable groundwater supplies in the coastal areas of Salinas Valley Groundwater Basin have been contaminated by intrusion of seawater from the Monterey Bay. The seawater has extended to approximately 8 miles inland in the upper (180-foot) aquifer, and to approximately 2 miles inland in the middle (400-foot) aquifer. Although there are no direct indications of seawater intrusion in the deep aquifer, there are concerns that continued and increased groundwater pumping may cause intrusion of seawater there as well.

Because MCWD relies on the deep aquifer for approximately 85 percent of its water supply, a long-term water management plan is of paramount importance to the District. As such, the District and DWR initiated investigating the reliability of the deep aquifer as a long-term water supply source.

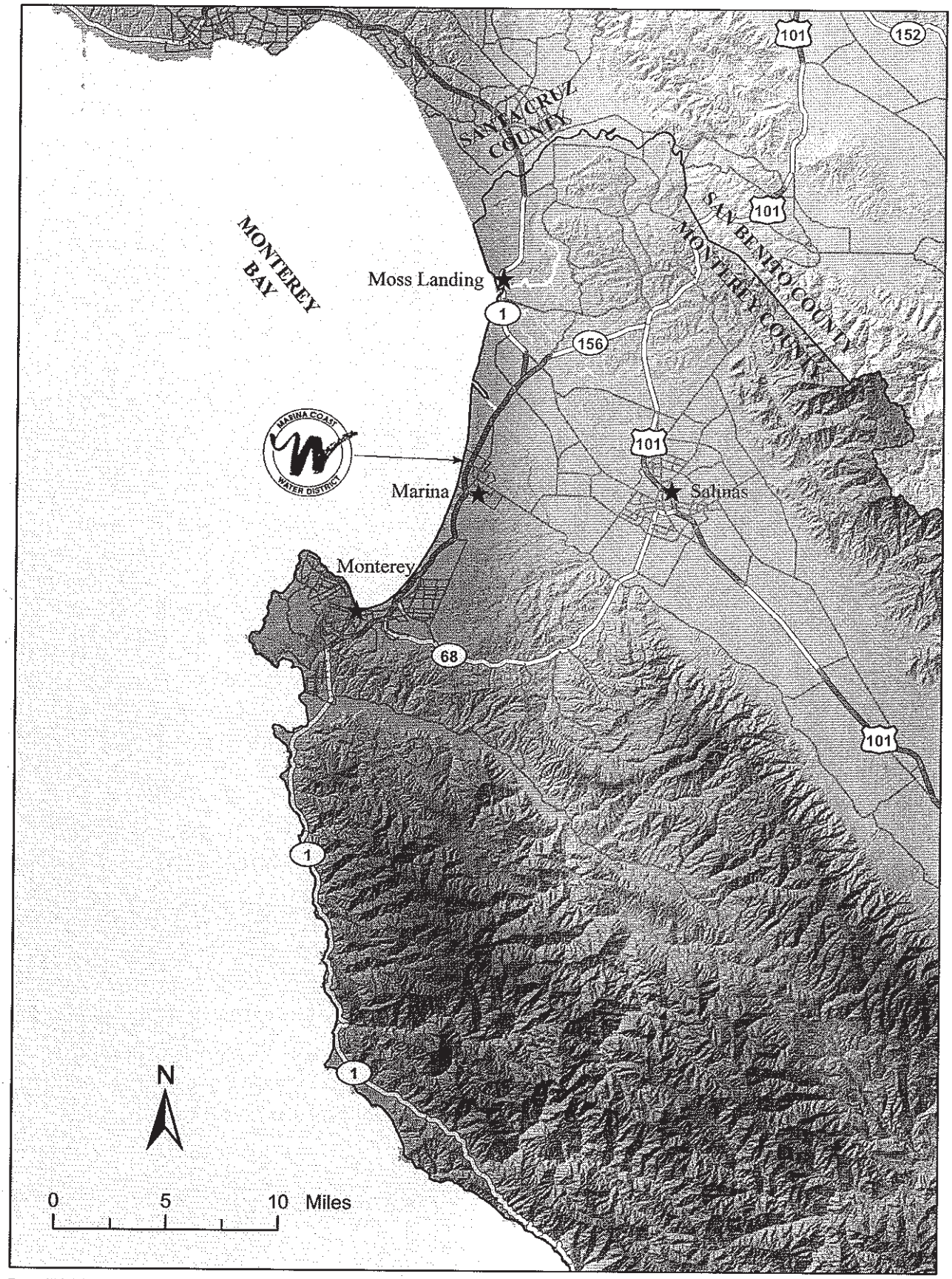
STUDY AREA

The study area is centered on the MCWD service area (Figure 1.1). Because of MCWD's geographical location relative to the advancing seawater in the 180- and 400-foot aquifers, the District was one of the first groundwater users forced to use the deep aquifers. Some agricultural users in the Castroville area also were forced to drill into the deeper sediments to provide water for agricultural purposes. The construction and operation of the Castroville Seawater Intrusion Project (CSIP) in 1998 allowed these agricultural users to abandon the use of their deep wells. As such, MCWD remains today the only significant user of the deep aquifer.

The study area is also defined by the availability of data. Relevant water well data are only available in those areas where deeper wells have been constructed and operated. Understandably, deeper wells have only been drilled in the intruded areas. Therefore, the available data are limited to this area. For this reason, the primary study area becomes those areas with, or threatened by, seawater intrusion in both the 180- and 400-foot aquifers.

DEEP AQUIFER DEFINITION

The term "deep aquifer" or "deep zone" has been part of the groundwater lexicon of the Salinas Valley for more than 25 years. Other alternative terms have included the "900-foot" and "1500-



Base: USGS 30-meter National Elevation Dataset (2001)

Figure 1.1 Vicinity map showing Marina Coast Water District

foot" aquifers. However, these terms are defined vaguely and the "deep aquifer" is not necessarily located at these arbitrary depths. The use of the deep aquifer has been driven by the need to drill deeper to avoid seawater intrusion. Initially, wells were drilled to the next deeper elevation that had fresh-water-bearing materials. Subsequently, wells were drilled to greater depths further extending the bottom of the deep aquifer. As such, the term "deep aquifer" became defined primarily by depth of well. Little effort was expended to understand the geologic nature and origin of the sediments that make up the deep aquifer.

Accordingly, the current use of the term "deep aquifer" essentially aggregates all sediments below the 400-foot aquifer without respect to geology. This report attempts to provide geologic assignments for the sediments encountered in these deeper wells such that a hydrogeologic framework can be developed to assist the understanding of these aquifer systems.

Throughout this document, the term "deep aquifers" will be utilized in place of "deep aquifer" because available data strongly suggest a multiple-aquifer system.

STUDY OBJECTIVES

There have been many geologic and hydrogeologic data in the Coastal areas of Monterey Bay that have not been evaluated in the past. In addition, the basin-wide hydrologic model, the Salinas Valley Integrated Ground and Surface water Model (SVIGSM), has been used for analysis of impacts in many studies, including the Salinas Valley Water Project. However, SVIGSM does not include all the latest geologic and hydrogeologic data representing the deep aquifer system.

The objectives of this study, as laid out in the MCWD's request for proposals, are as follows:

- Identify all users and their use rates of the Salinas Basin deep aquifer.
- More fully characterize the deep aquifer.
- Identify the safe yield of the deep aquifer including more accurate characterization of recharge rates, transmissivity, and connectivity to the middle and upper aquifers.
- Update the Salinas Valley Integrated Ground and Surface Water Model (SVIGSM) to be able to address yield and seawater intrusion questions related to aquifer use.
- Develop a deep aquifer groundwater management component to the Salinas Valley Water Plan through a consensus building, stakeholder process.

To achieve such goals, the following scope of work was developed:

Task 1 - Establish project management methods;

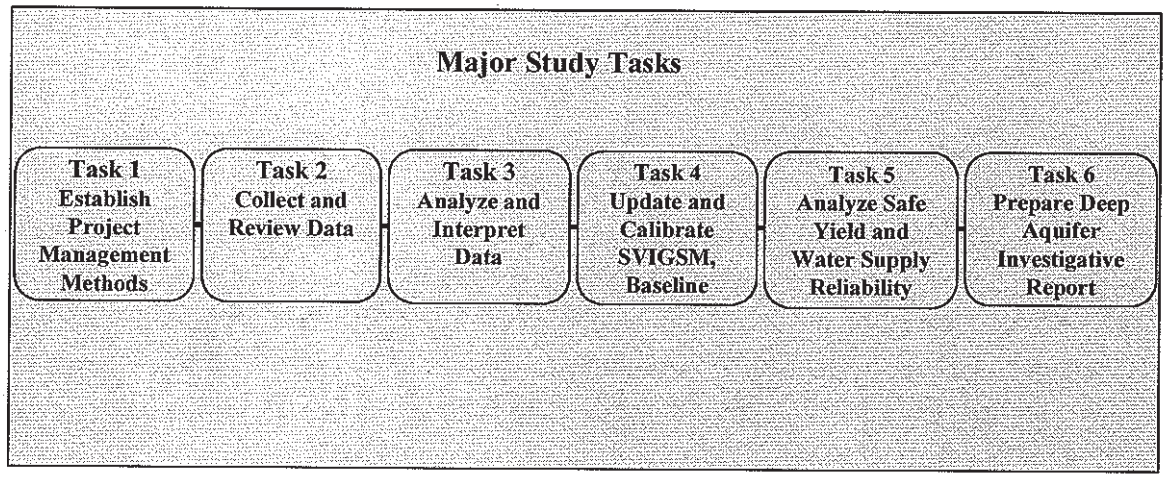
Task 2 - Collect and review data about the Deep Aquifer;

Task 3 - Analyze and interpret data about the Deep Aquifer;

Task 4 - Update the SVIGSM;

Task 5 - Estimate safe yield and analyze water supply reliability; and

Task 6 - Prepare Report and Presentation of Findings.



REPORT ORGANIZATION

This report provides documentation of the work performed and the findings of the study. The report is organized into the following sections:

Section 1: Introduction - Describes the purpose, project background, study area, scope of project, and organization of this report.

Section 2: Data Analysis and Synthesis - Describes the data collected, analysis of the time series data and its incorporation in the model, and estimation of missing data.

Section 3: SVIGSM Update - Describes the background of the model, impacts of updating the code and of updating the model database, and the efforts to mitigate those impacts.

Section 4: Water Supply Reliability and Safe Yield Analysis - Describes the definition of safe yield, the criteria developed and used to analyze safe yield, and impacts of several potential groundwater supply alternatives.

Section 5: Summary of Findings - Presents summary of study findings.

SECTION 2 DATA ANALYSIS AND SYNTHESIS

This section tabulates and analyzes the available hydrogeologic data from the coastal portion of the deep aquifers system of Monterey County. The deep aquifer designation derives from the history of water resource development in Monterey County. Advancing seawater intrusion, first in the 180-foot aquifer, then in the 400-foot aquifer, forced groundwater users to progressively drill deeper to find fresh water. The first deep aquifer water well was drilled in 1976; approximately nine more water wells have since been drilled into this aquifer system in the coastal area.

This section attempts to integrate all available data on the aquifer systems underlying the 180- and 400-foot aquifers of the Salinas Valley to develop an improved understanding of the groundwater resource. This refined understanding is then used to update the representation of the deep aquifer the SVIGSM. Several local-scale investigations into the hydrogeology of the deep aquifers have been performed over the last 20 years and provided useful insight into the understanding of the deep aquifers. However, this evaluation represents the first attempt to bring together all the data that have been developed since the preparation of the Deep Aquifer Report prepared in 1976 by Richard Thorup (unpublished draft report).

The available data set for the deep aquifers is scanty. These data are presented in this report with preliminary conclusions. Conclusions should be considered provisional and are subject to revision when more data become available. Much of the available data raises questions that cannot be adequately answered, or even speculated upon, within the existing framework of understanding. The data, corresponding interpretation, and conceptual understanding have been incorporated into the SVIGSM so that additional insight can be gained by evaluating the results of modeling analyses.

PREVIOUS REPORTS

The hydrogeology of the northern Salinas Valley has been the subject of many studies, such as the landmark 1946 Salinas Basin Investigation (DWR, 1946), and, more recently, the 1994 Salinas River Basin Water Resources Management Plan (Montgomery Watson, 1994). However, these studies focused on the shallow aquifers, commonly referred to as the 180-foot and the 400-foot aquifers, and not on the deep aquifers. Only several studies specifically focus on the deep aquifers and provide significant insight into its hydrogeology. The most significant are summarized below:

Thorup (1976, 1983)—In 1976, Richard Thorup issued a draft report discussing the results of a 1,718-foot-deep test well (Fontes well) for the proposed Castroville Irrigation Project (CIP). This well is significant because it was the first water well to test the deep aquifers. Based on his analysis of the test well and other oil and water wells, Thorup estimated that the "900-foot aquifer" extended from the mouth of the Salinas River southward to Greenfield and contained nearly 11 million acre-feet of fresh water. Thorup concluded that the Fontes well would not produce enough water for the CIP and recommended an alternate location at the Marihart Ranch, south of Spreckels. Thorup updated this report in 1983 to include the information from three additional wells subsequently perforated into what he considered the deep aquifer—the Monterey County Mulligan Hill well (14S/02E-06L01), Leonardini #3 (13S/02E-19Q03), and Monterey Dunes #1 (13S/01E-36J01). Accompanying the 1983 report were a series of geologic maps and cross sections that depicted the extent and geometry of the deep aquifers. Based on more refined data, Thorup calculated that the deep aquifers contained approximately 4.6 million acre-feet of usable groundwater and estimated a recharge rate of 65,500 acre-feet per year.

Grasty (1988)—As part of his M.S. thesis research, James Grasty performed and interpreted gravity and magnetic surveys across the Armstrong Ranch in the city of Marina. Grasty observed a northwest-trending gravity low and magnetic anomaly, which he interpreted as a shear zone related to the "King City fault" (Reliz fault). More germane to the present study of the deep aquifers is his hypothesis of "the presence of an anomalous area (bedrock depression) where a thick sequence of Quaternary sediment accumulated" between the Marina No. 10 and 11 wells (Grasty, 1988, p. 24–25). This is the first depiction of the "Marina trough."

Geoconsultants (1999)—At the American Association of Petroleum Geologists, Pacific Section, meeting in the city of Monterey, Jeremy Wire and his associates presented a paper showing a feature called the Marina trough, which is located between the Mulligan Hill well and the Reliz fault. Geoconsultants postulated the existence of the Marina trough based on the presence of an extremely thick section of sediments, which were identified as Pleistocene age, based on microfossil analysis by Dr. James Ingle of Stanford University.

Hanson and others (2002)—As part of a U.S. Geological Survey (USGS) research project, a 2,000-foot-deep monitoring well cluster was drilled in Marina. This report provides valuable information on stratigraphy, water levels, and water chemistry of the deep aquifers, in addition to the well construction. Of particular interest is the documentation of Pliocene-aged sediments from the depths of 950 to 2000 feet.

Montgomery Watson (1993) – This report presented, in draft form, the first version of the SVIGSM. The model was developed as a hydrologic model that integrates the groundwater and surface water flow systems, along with a water quality model. The model also simulates the

operation of the Nacimineto and San Antonio reservoirs, regulating the flows to the Salinas River system. This report focuses on the development and calibration of the groundwater flow and quality models.

Montgomery Watson (1997) – This report presents the update of SVIGSM calibration. The model underwent substantial review and analysis as part of this effort.

Montgomery Watson (1998) – This report presents the update and applications of the SVIGSM. The SVIGSM was used to evaluate the historical hydrologic benefits of operation of Nacimiento and San Antonio reservoirs on the groundwater basin, as well as the Salinas River flows. The report also presents the analysis of flood control and economic benefits of historical operation of the reservoirs.

GROUNDWATER LEVEL DATA

Water level data are available for wells in the deep aquifers in the Castroville area from the Monterey County Water Resources Agency (MCWRA). Intermittent water level data are also available from MCWD for their three production wells. Continuous water level data since June 2001 are available for the USGS Monitoring well cluster.

MARINA COAST WATER DISTRICT WELLS

A static water level history of MCWD wells can be assembled from various sources. MCWD has collected static water level data from these wells on an irregular schedule, creating several long data gaps. Other sources include data collected at the time of well construction and spot measurements collected by contractors as part of pump servicing. The most apparent data gap is the period from early 1998 until early 2002 for which no static water level data are available. Since beginning this investigation, static water level data have been collected on an almost continuous basis. The available water level data are presented on Figures 2.1 to 2.4b.

Although the record in Figure 2.1 is incomplete, the static water level history of all the wells shows a general pattern. Water levels at the time of well completion are close to sea level. During the first several years of operation, static water levels fall relatively rapidly. Then static water levels appear to level off and maintain a narrow range of fluctuation. All three of MCWD's wells have maintained water levels significantly below sea level since initiation of extractions. Well Nos. 10 and 11 display water levels averaging 40 feet below mean sea level. Well No. 12 displays average water surface elevation of approximately 15 feet below msl. Of interest are the strong vertical gradients maintained between these wells and the increasing head with increasing well depths.

Figure 2.1
Marina Coast Water District Deep Aquifer Wells Water Level Data

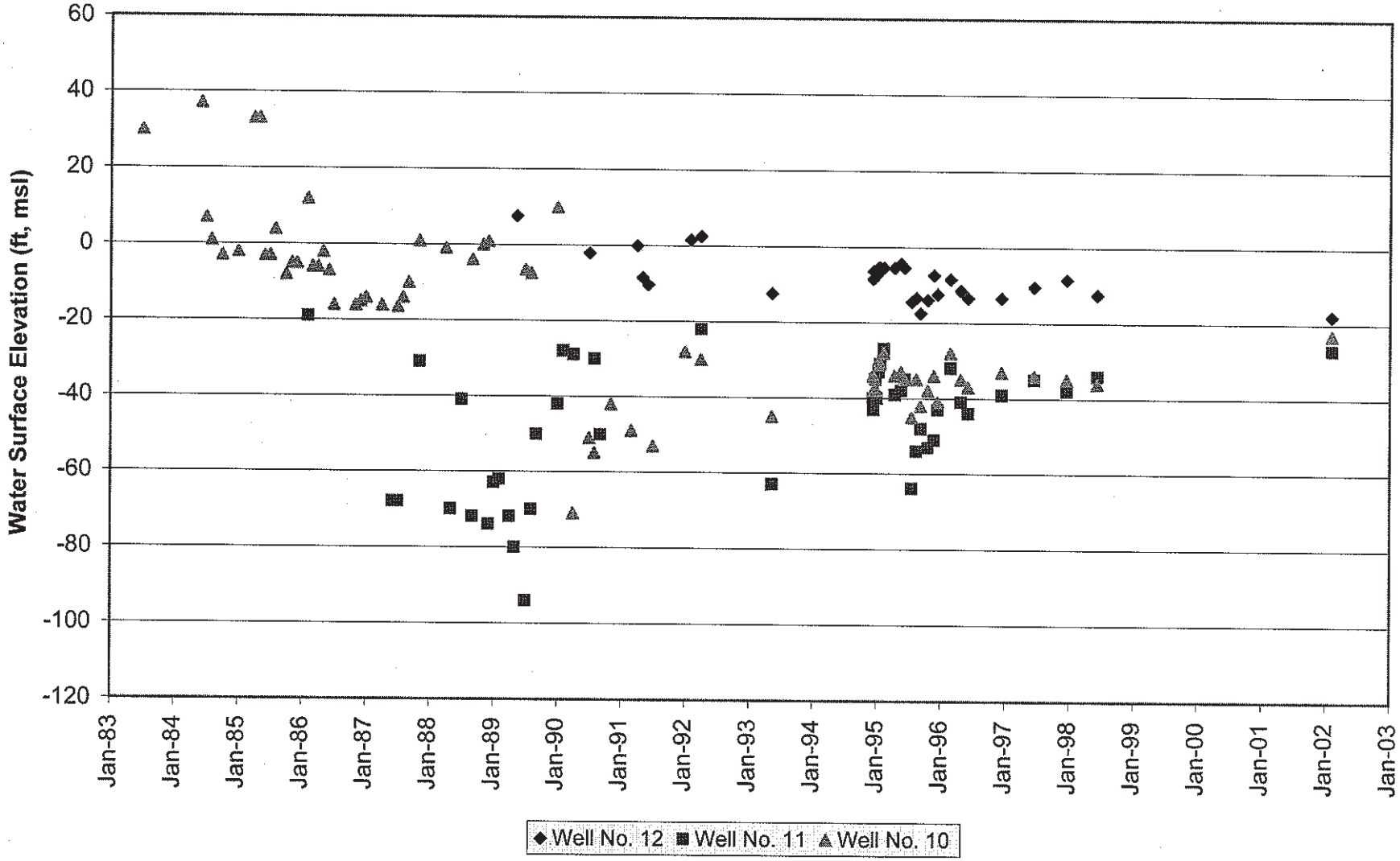


Figure 2.2a MCWD Annual Production from Well 10

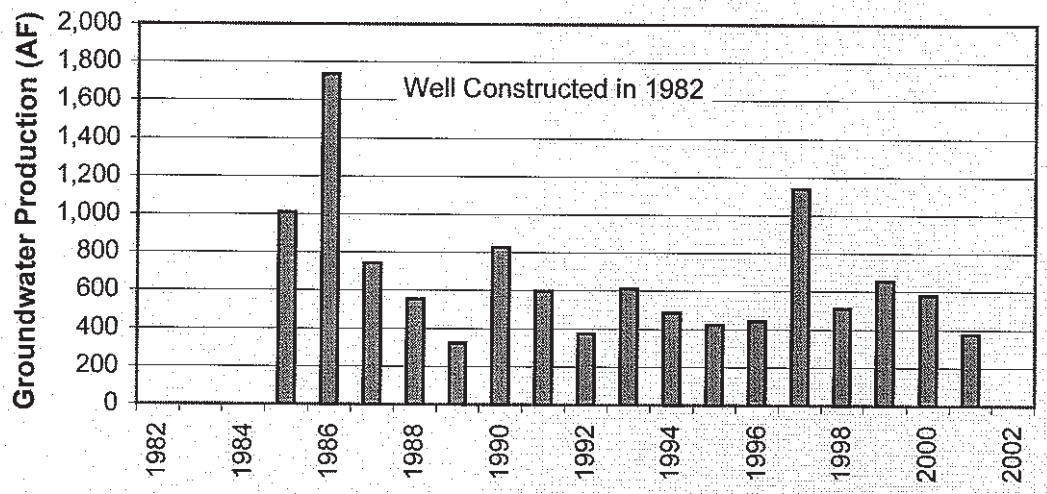


Figure 2.2b MCWD Groundwater Levels for Well 10

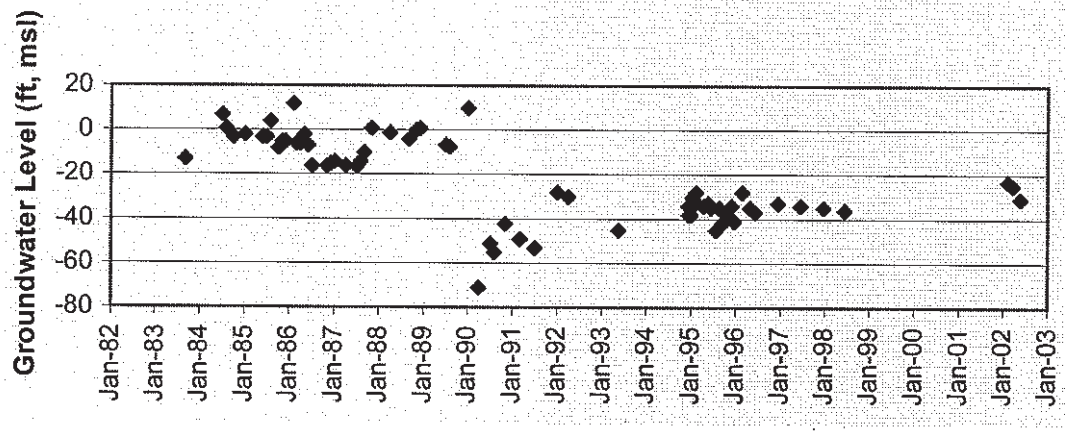


Figure 2.3a MCWD Annual Groundwater Production from Well 11

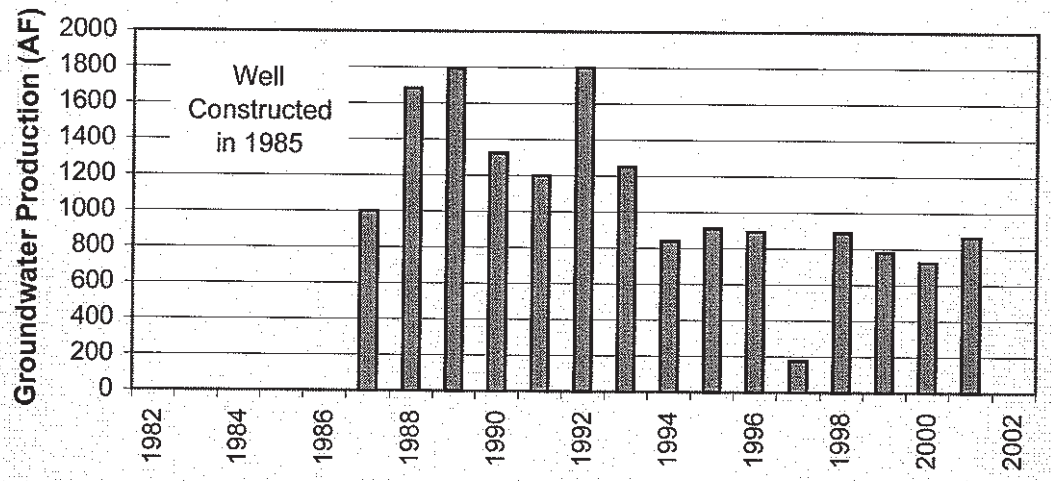


Figure 2.3b MCWD Groundwater Levels from Well 11

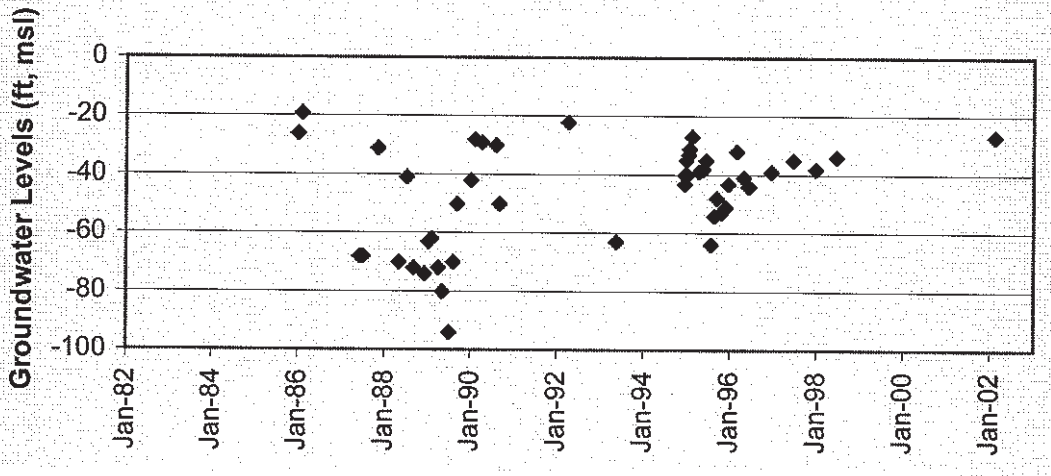


Figure 2.4a MCWD Groundwater Production from Well 12

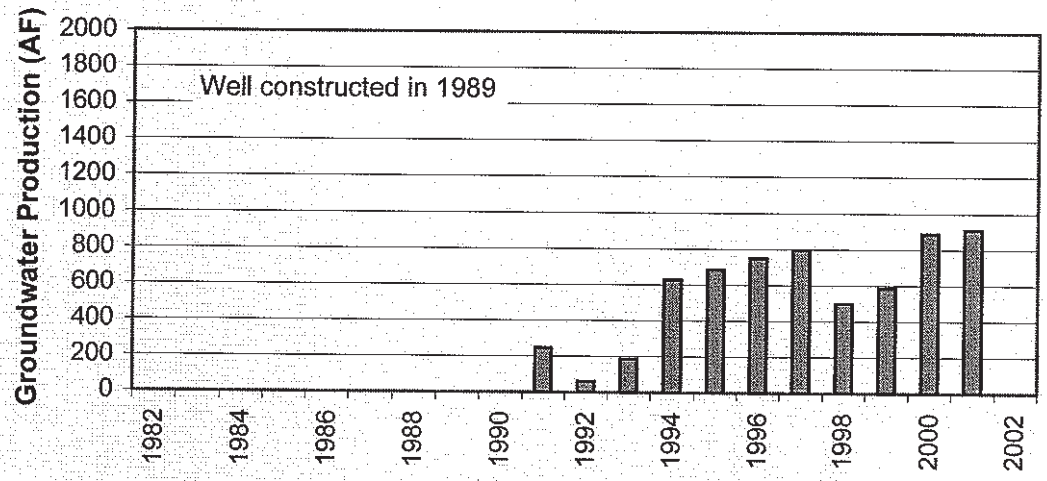
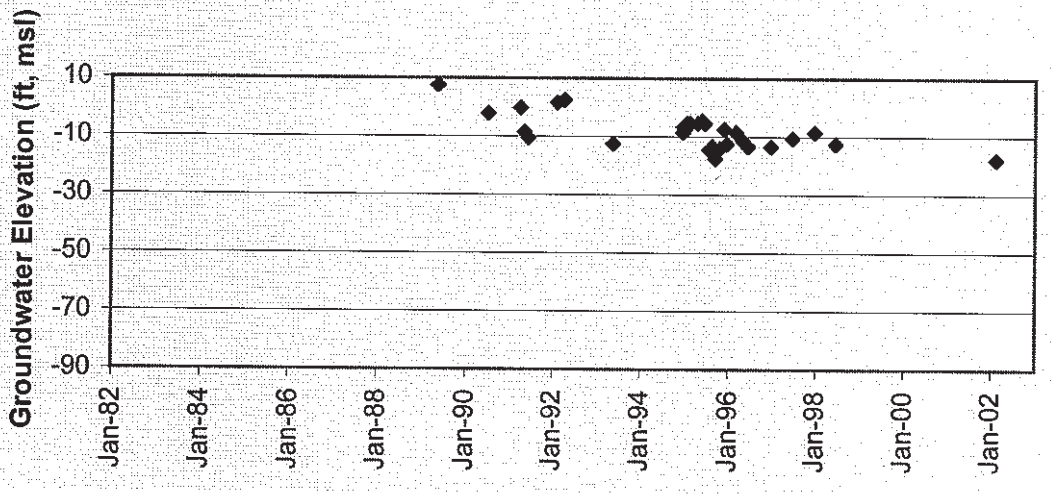


Figure 2.4b MCWD Groundwater Levels from Well 12



Figures 2.2a through 2.4b present annual production and static water level history for each of MCWD's wells. Water level data are generally too sparse to discern a strong linkage between extractions at Well Nos. 10 and 11. The record for Well No. 12 is clearer and shows a general decline in water level with increasing extractions. Taken together, the records from all the wells allow an understanding of how the overall operation of the well field impacts water levels at each well site. The water level record from Well No. 10 shows a large shift in average water level in 1989 (approximately). This is the period when production from Well No. 11 was coming on-line. As is discussed below, Well Nos. 10 and 11 display significant mutual interference effects. Beginning in 1987, water level records in Well Nos. 10 and 11 reflect the aggregate pumping from these wells. As discussed below, the hydraulic linkage between Well Nos. 10 and 11 and Well No. 12 is poor.

Figures 2.5a and b present monthly production and water levels from MCWD wells during the period from January 1995 to December 1997—the period with the most water level data. Figure 2.6 shows the seasonal fluctuations in water levels in response to demand variations. While the magnitude of the response differs, generally the observed fluctuation in water level is proportional to the variation in monthly production from a given well.

Castroville Area Wells

The MCWRA collects monthly data from five of the wells completed in the Castroville area deep aquifers. Monthly water level data extends back to approximately October 1986. These data are presented in Figure 2.7. The water level records display a strikingly similar response. The annual irrigation cycle is apparent in the records of all the wells, with all the wells displaying approximately 40 feet of annual water level fluctuation. Of interest is that the record from Well No. 13N/2E-32E05, an observation well, is essentially identical to the records of the surrounding production wells, suggesting a highly connected, confined system. The regional response of the aquifer system to the cessation of pumpage in 1998, with the onset of CSIP water deliveries, is also striking. Water levels in all wells recovered to above sea level elevations by 2000, again indicative of a connected, confined aquifer system.

Figure 2.8 presents the water level records from selected Castroville wells with the MCWD wells record. The cessation of pumpage due to CSIP water deliveries has provided for a significant relaxation of the aquifer in the Castroville area; however, the water level record from the MCWD's wells, although sparse, shows no apparent response to this regional relaxation.

Figure 2.5a MCWD Total Groundwater Production

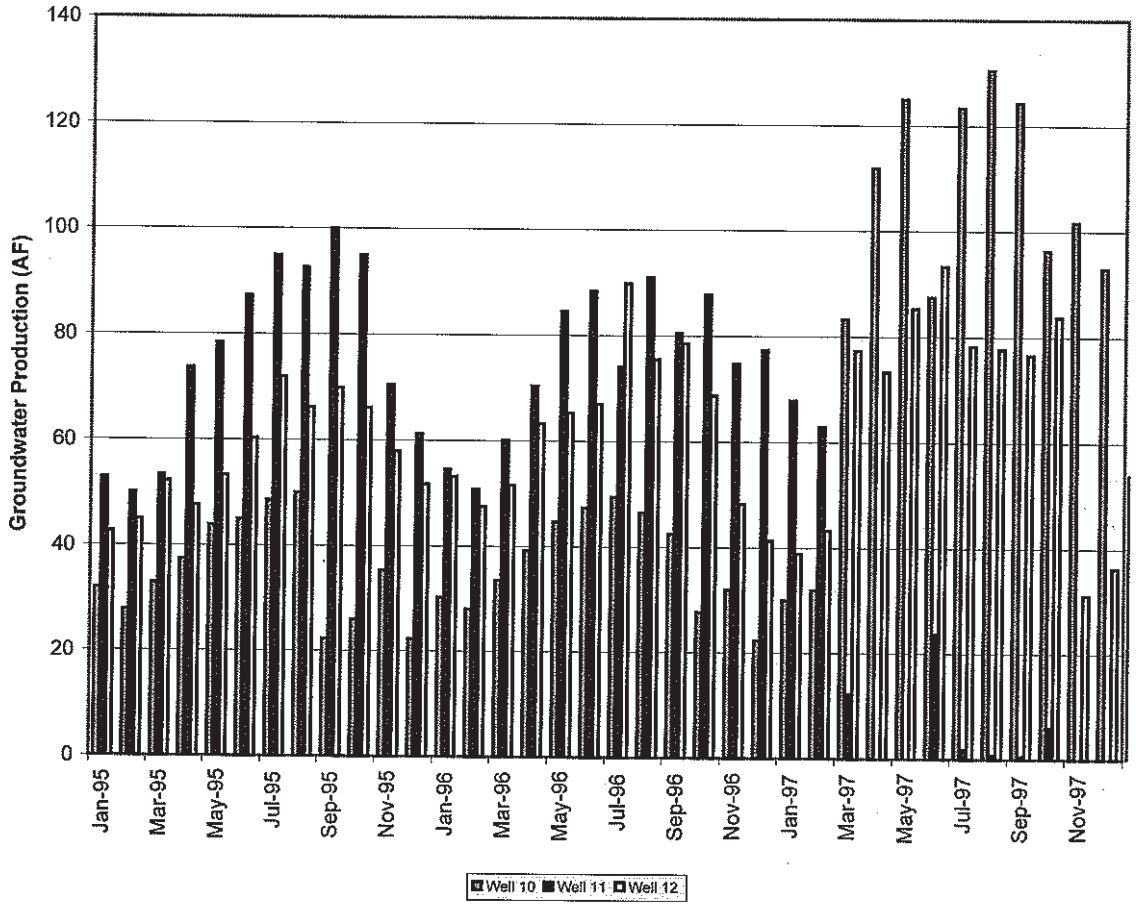


Figure 2.5b MCWD Groundwater Levels

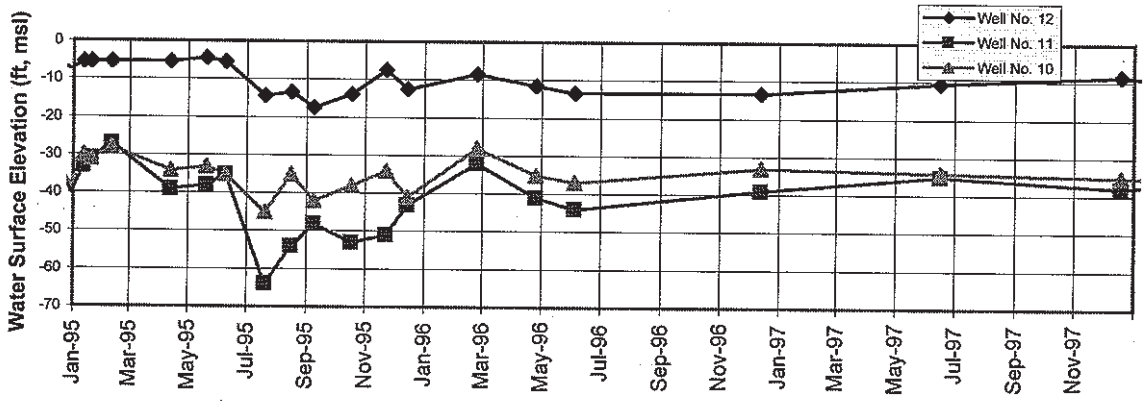


Figure 2.6
Water Level History Castroville and Marina Area Deep Zone Wells

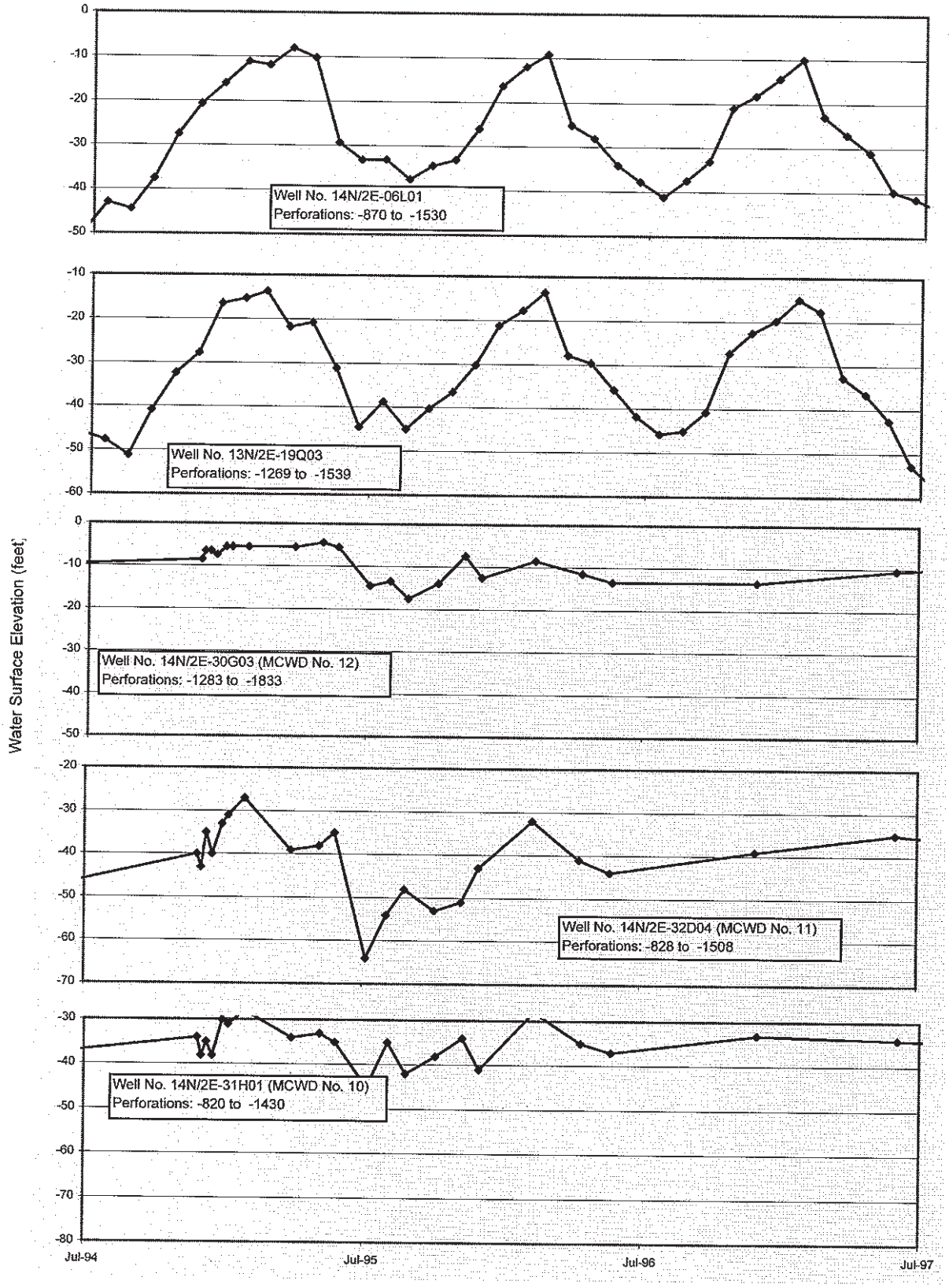
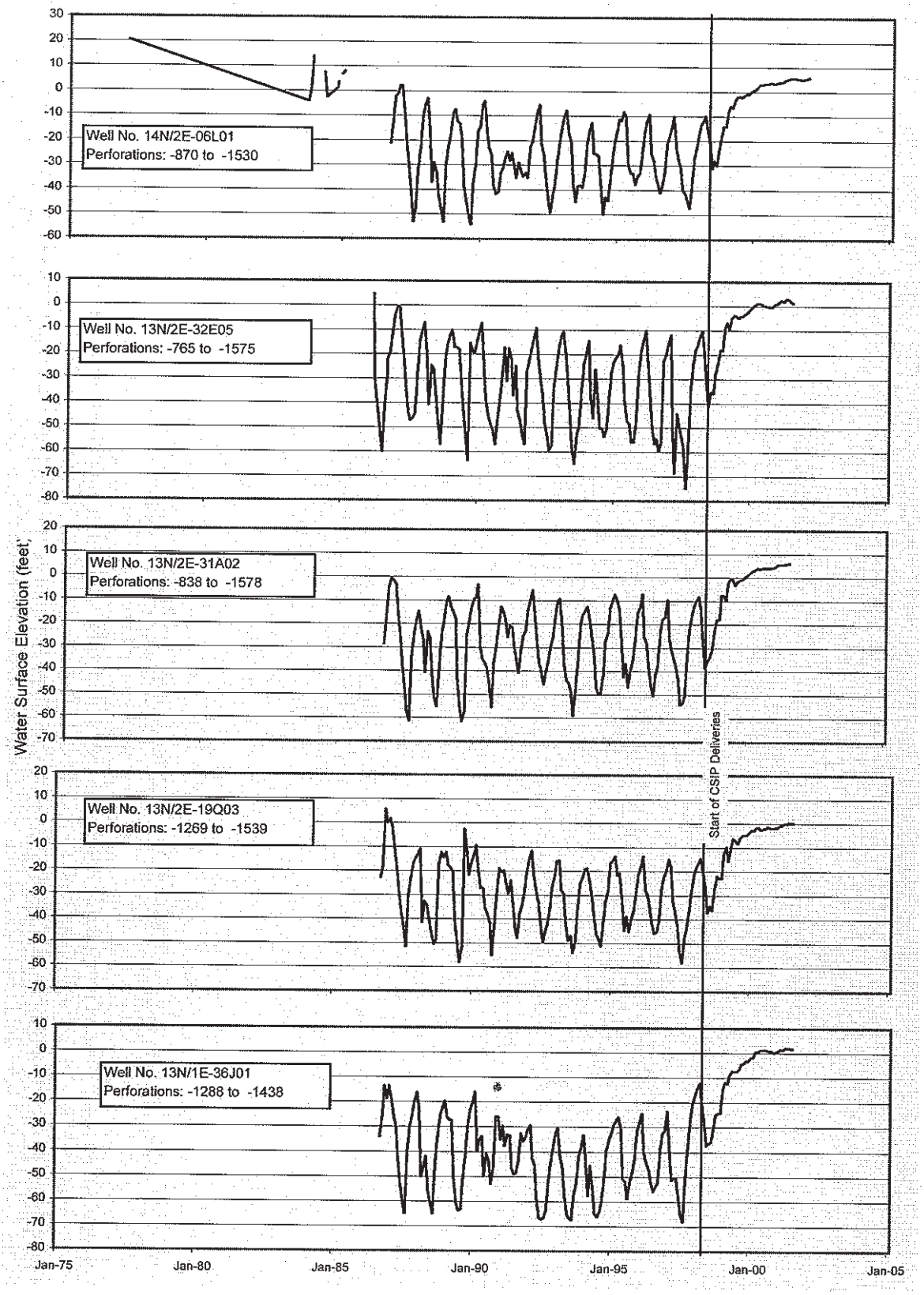
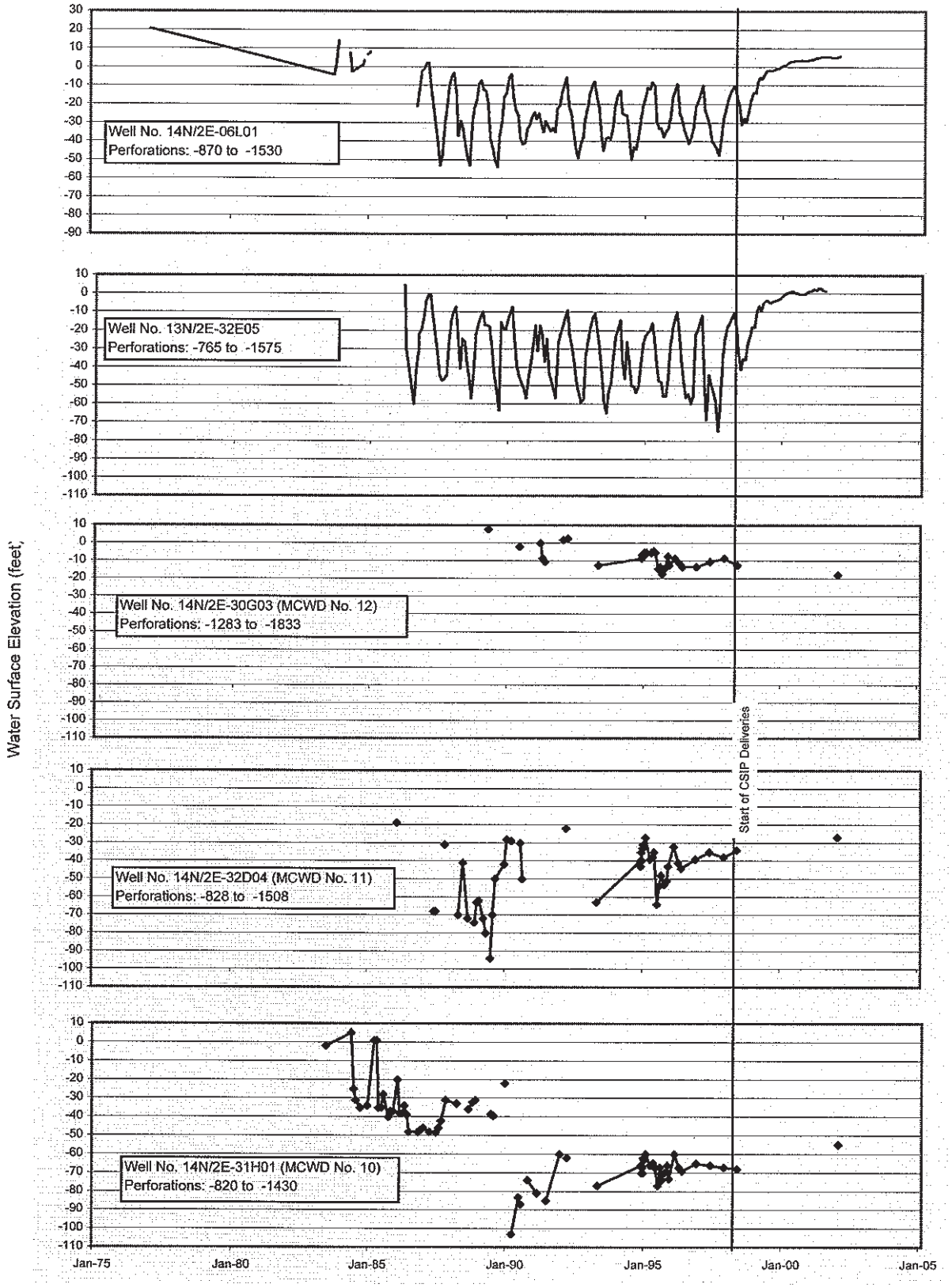


Figure 2.7
Water Level History
Castroville Area Deep Zone Wells



Figures\Fig 2.7-Castro Wells

Figure 2.8
Water Level History
Castroville and Marina Area Deep Zone Wells - CSIP Deliveries



Figures\Fig 2.8 Marina-Castro Wells

USGS Monitoring Well

Working for MCWD and MCWRA, the USGS completed a well designed to monitor groundwater conditions in the deep aquifers. The well is located at MCWD's headquarters and consists of four separate wells completed in the same borehole. The wells were designed to monitor groundwater conditions at specific depths selected based on review of the borehole data and the consideration of construction of proximal wells. The well monitors four discrete zones ranging in thickness from 20 to 40 feet. After completing the monitoring well cluster, MCWRA equipped the monitoring wells with continuous water level recording devices. Water level data has been collected since June 2001. The average water level for each monitoring well, as well as for MCWD's production wells, is summarized in Table 2.1 below.

Table 2.1 Average Groundwater Levels for USGS Monitoring and MCWD Production Wells

Well	Elevation of Perforations (feet)	Average Water Surface Elevation (feet)
DMW-1-1	-1754 to –1804	-2.7
DMW-1-2	-1334 to –1354	2.3
DMW-1-3	-984 to –1004	-17
DMW-1-4	-874 to –894	-16.2
MCWD No. 10	-788 to –1398	-38
MCWD No. 11	-828 to –1508	-40
MCWD No. 12	-1283 to –1833	-12

Drawing conclusions from comparison of the groundwater elevation data in the USGS well with that of the production wells is difficult. The USGS wells are completed in thin, discrete zones while the production wells are completed across multiple zones. For example, the intervals within which DMW-1 and DMW-1-2 are completed are included in a single perforated interval of Well No. 12. The water surface in DMW-1-2 is substantially above that of Well No. 12 while DMW-1-1 is below it. The water level in Well No.12 is likely a composite head of several smaller zones of differing heads from which it produces.

GROUNDWATER PRODUCTION

Ten water wells have been installed in Monterey County to produce from the deep aquifers. MCWD operates three wells: MCWD Well Nos. 10, 11, and 12. Monthly production data from these wells are available from MCWD. The remaining seven wells are agricultural supply wells. Production data from these wells are reported to MCWRA, so are confidential and not available. However, because these wells are now idle due to construction and operation of

CSIP, the data from these wells are less important. Data from MCWD are summarized in Figure 2.8.

Figure 2.9a reveals annual production from the deep aquifers to have been relatively constant since the completion of Well No. 12 in 1990. Total production has averaged approximately 2000 acre-feet/year over this period. Figure 2.9b also shows monthly production for the period. The seasonal distribution of demand is apparent, with winter extractions as low as approximately 100 acre-feet/month (AF/M) and summer extractions exceeding 250 AF/M.

GEOLOGIC AND HYDROGEOLOGIC DATA

Geology: This section describes the geologic characteristics of the deep aquifers based on stratigraphic and structural information.

STRATIGRAPHY

Granitic basement — The oldest unit in the study area consists primarily of granitic rocks, secondarily of metamorphic rocks. These rocks form the Sierra de Salinas and Gabilan Range that border the Salinas Valley. In the subsurface, the granitic rocks underlie the Tertiary and Quaternary sedimentary rocks. Several of the wildcat oil wells drilled along the coast reached the granitic basement.

Lower to Middle Miocene sedimentary rocks — Overlying the granitic basement are a series of marine sedimentary rocks which include an unnamed arkosic sandstone formation and the Monterey Formation. These rocks crop out in the hills near Monterey, Corral de Tierra, and Carmel Valley. Because these formations have been uplifted, folded, and eroded, their total thickness is unknown. However, within the area of Cross Sections A and B, these sedimentary rocks are approximately 1,000 to 2,000 feet thick. One possible exception is the area beneath the Elba Capurro and Bayside Development Vierra wells where a thick section of sandstone indicates a possible buried canyon (Starke and Howard, 1968).

Upper Miocene to Pliocene marine sequence — As described by Clark (1981, p. 24), this sequence consists of a shallow-water transgressive sandstone unit (the Santa Margarita Sandstone), a deeper water, siliceous, organic mudstone unit (the Santa Cruz Mudstone) and a shallow-water unit (the Purisima Formation). In Monterey County, only the Santa Margarita Sandstone is exposed on land, whereas the Santa Cruz Mudstone and the Purisima Formation crop out offshore in Monterey Bay. Interpretation of drill hole data suggests that the thickness of the Purisima Formation ranges from 500 to 1,000 feet in the area of Cross Sections A, B, and

Figure 2.9a MCWD Annual Groundwater Production

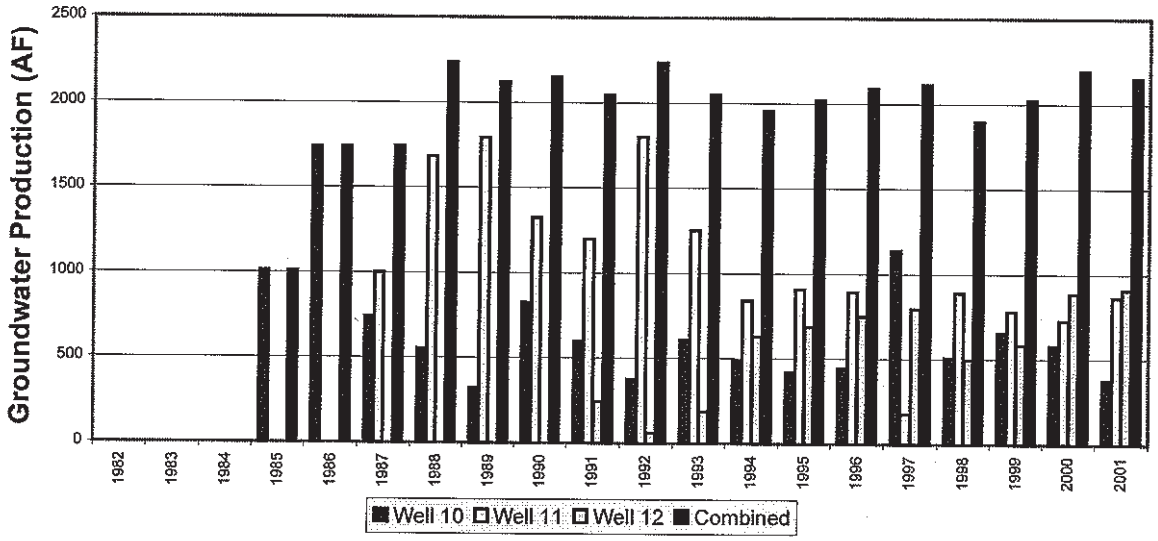
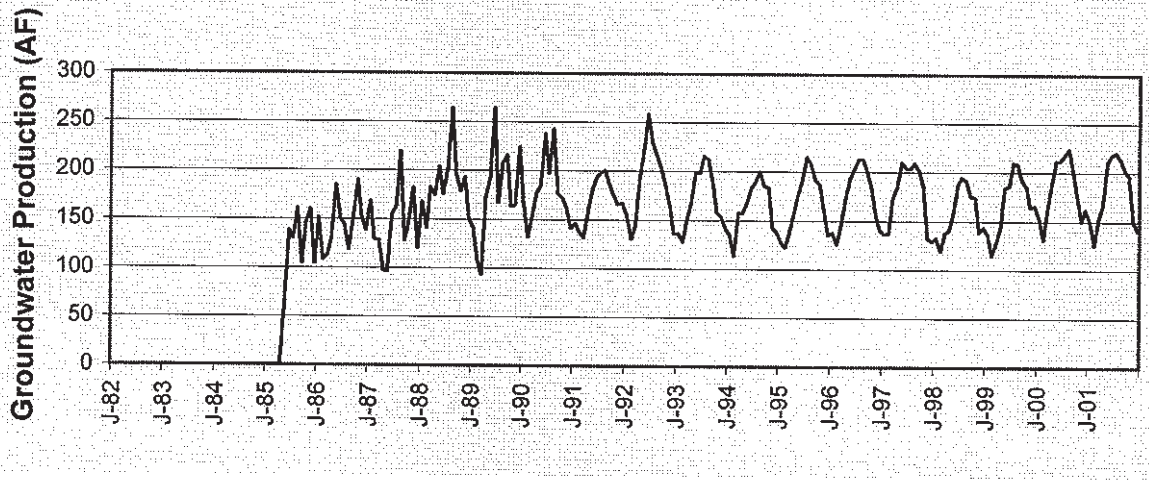


Figure 2.9b MCWD Monthly Groundwater Production



C. In the Gabilan Range and in the subsurface Salinas Valley, the Pliocene age Pancho Rico Formation is present. Although it was deposited in a different basin than the Purisima Formation, the Pancho Rico Formation contains fauna similar to and is litho logically identical to the Purisima Formation (Gribi, 1963). The thickness of the Pancho Rico Formation in the Marihart-Luckey well is about 1, 000 feet.

Pliocene and Quaternary nonmarine — This group includes three units — the Pliocene-Pleistocene Paso Robles Formation, the Pleistocene Aromas Sand, and undivided Quaternary surficial deposits. These sediments form most of the outcrops in the lower Salinas Valley and are widespread in the subsurface. Although aquifer recharge occurs through the Quaternary sediments, they do not constitute a major water supply sources. The surficial Quaternary sediments include floodplain deposits, alluvial fans, eolian deposits, fluvial and marine terraces, and basin deposits. The Paso Robles Formation and the Aromas Sand are important water sources for the Salinas Valley and include the 180-foot and the 400-foot aquifers.

STRUCTURE

Faults — The Salinas Valley is a tectonic depression between two structural highs, the Gabilan Range to the northeast and the Santa Lucia Range to the southwest (Dupré, 1991). Uplift of the Gabilan Range is largely due to transpressional forces from the San Andreas fault (Dohrenwend, 1975). One of the principal faults associated with uplift of the Santa Lucia Range is the San Gregorio fault; it is the primary fault west of the San Andreas Fault in central California, and extends northward from Big Sur across Monterey Bay to join the San Andreas Fault north of San Francisco. Some right-slip from the San Gregorio fault has been distributed eastward to intra-Salinian faults, including the Monterey Bay/Navy/Tularcitos fault zone. The Monterey Bay fault zone is a 6-to 9-mile-wide zone of short en echelon northwest-striking faults that are the offshore extension of the northwest-striking faults in the Salinas Valley and Sierra de Salinas (Greene and others, 1973). As shown on Cross Section B–B', the Monterey Bay fault zone offsets Purisima Formation against Monterey Formation, with the southwest side upthrown. Another important strike-slip fault is the Rinconada fault that trends northwestward along the western side of the Salinas Valley. The Rinconada fault extends from Santa Margarita to Arroyo Seco. Near Arroyo Seco, the Rinconada fault dies out, steps east, and continues the Reliz fault. The Reliz fault extends at least as far north as Spreckels and likely joins the offshore Monterey Bay fault.

Gravity — A compilation map of isostatic gravity contours shows a prominent gravity low with a value of about -46 mGal near the western boundary of the former Fort Ord. This low extends as a northwest-southeast direction beneath the USGS DMW-1, Marina No. 11, Marina No. 12, and Fort Ord D wells (Langenheim and others, 2002). We interpret this gravity low as a

concealed sedimentary basin with the deepest part near Marina and the former Fort Ord. This deep basin could partly explain the unusually thick section of Purisima Formation penetrated by the USGS DMW-1 well. The gravity low continues southeastward, forming a trough parallel to the axis of the Salinas Valley.

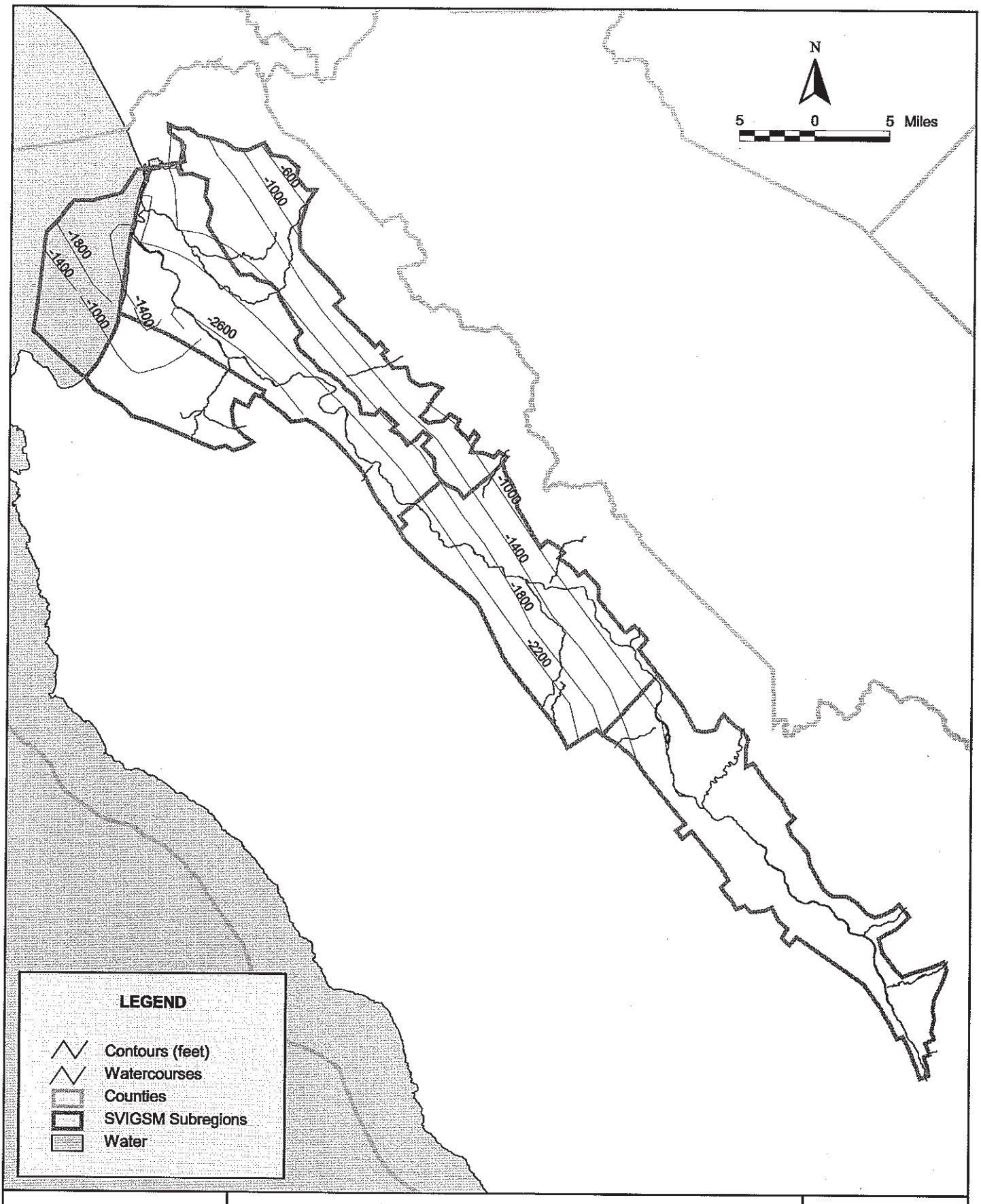
Monterey Formation subcrop — We contoured the top of the Monterey Formation and the bottom of the Upper Miocene to Pliocene marine sequence, which consists of the Purisima Formation near the coast and the Pancho Rico Formation in the central Salinas Valley. Picks were compiled from several sources. Sources included interpretation of well logs and gravity data in the coastal area (this study), previous work in the Seaside and Laguna Seco area (Rosenberg and Clark, 1994; Yates and others, 2002), and cross sections of the Salinas Valley (Thorup, 1983). The data from these sources were reconciled to develop a map encompassing the region from the coast southeastward to King City. The density of well control is greatest near the coast and decreases farther southeast. Likewise, the accuracy of the picks follows the same pattern.

The resulting structural contours were digitized and saved as ESRI shapefiles. Figure 2.10 shows the structural of the top of the Monterey Formation. To create a three-dimensional surface of the structure, the shapefiles were converted into ESRI grid format. The area between the contours was interpolated with the tension spline method using ArcView 8.2 Spatial Analyst software. The altitude of the structural contours was then joined to existing nodes of the Salinas Valley Integrated Groundwater and Surface Water Model for use in modeling flow in the Deep Zone.

Sources of Information

As part of modeling the deep aquifers, we developed three geologic cross sections. To construct the cross sections, a variety of sources were used. These include published geologic map compilations by Wagner and others (2002) and Rosenberg (2001), unpublished oil well records (on file at the California Division of Oil and Gas Resources (CDOGR), Santa Maria, California), unpublished scout reports (Gribi, E.A., and Thorup, R.R., unpublished notes), unpublished micro-paleontology reports (Chevron, undated; Ingle, 1989), and unpublished water well records (on file at the MCWRA, the MCWD, and the Monterey Peninsula Water Management District [MPWMD]). Information from these sources was integrated to form a coherent, internally consistent model of the subsurface geology extending from Moss Landing southward to Seaside, and from the offshore Monterey Bay southeastward to near Spreckels.

Figure 2.11 shows a cross section location map. Cross Section A-A' (Figure 2.12a) is parallel to the coast and extends from Seaside northward to the Elkhorn area. Cross Section B-B' (Figure 2.12b) is perpendicular to the coast and extends from approximately 9 miles offshore



MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Structural Contours for Top of Monterey Formation

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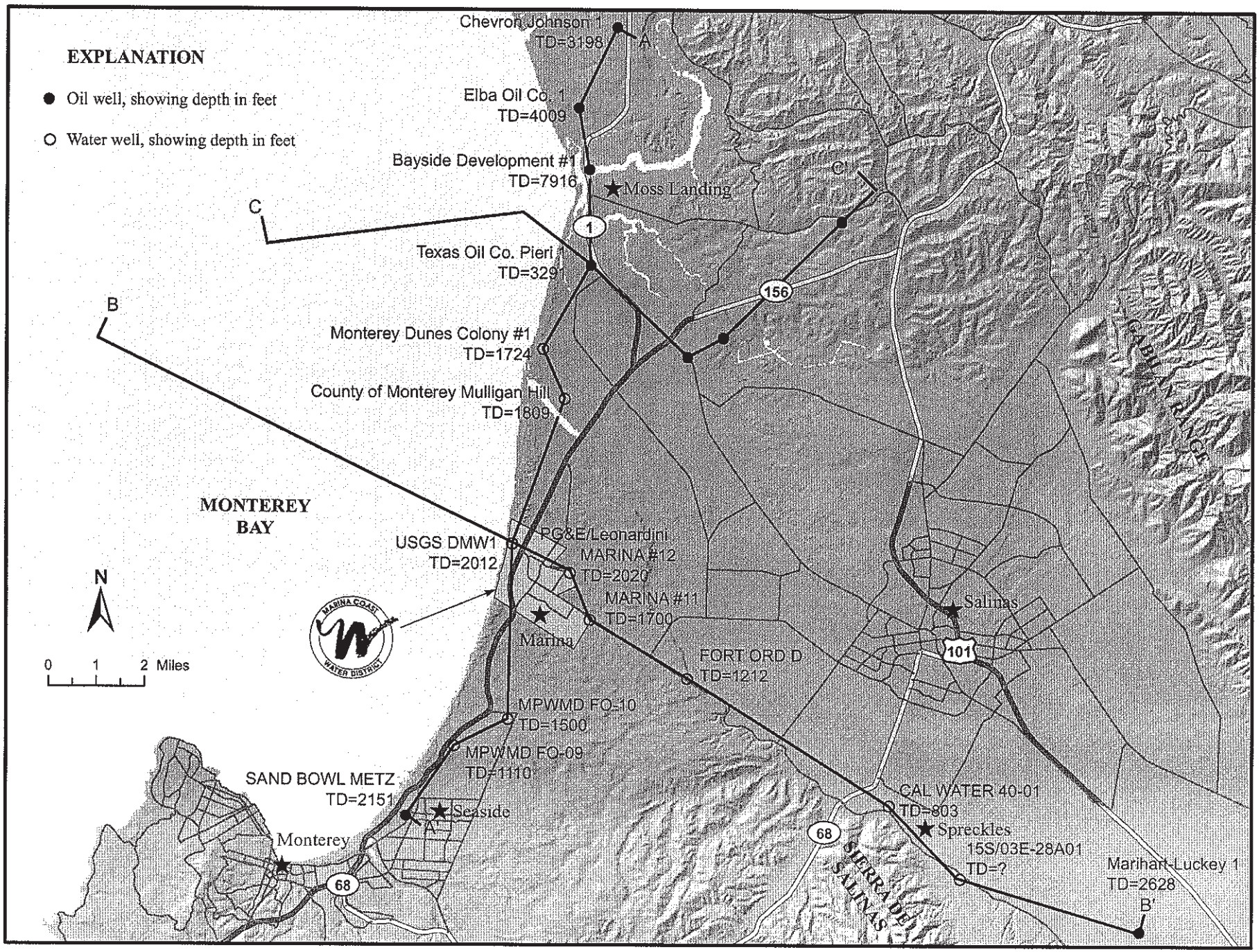
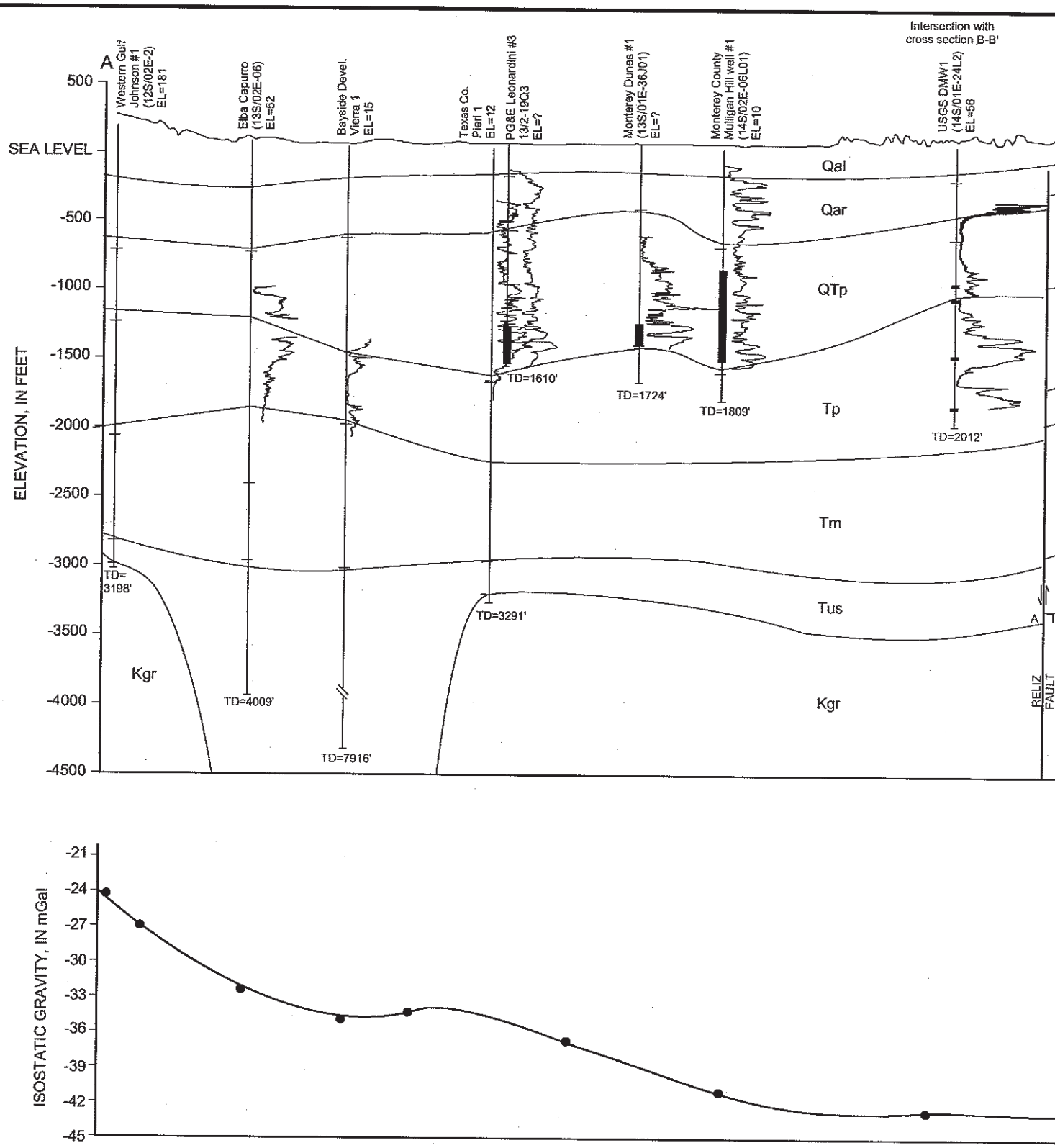
FIGURE 2.10



Base: USGS 30-meter National Elevation Dataset (2001)

Figure 2.11 Cross Section Location Map



SOURCES OF DATA

Geologic data compiled from published mapping (Hanson and others, 2002; Wagner and others, 2002; Rosenberg, 2001), oil well logs (CDOG files), unpublished scout reports (Gribi, E.A., Thorup, R.R.), unpublished micro-paleontology reports (Chevron, undated; Ingle, J.C., 1989; McDougall, K., 2001), water well logs (MCWRA, MCWD, and MPWMD files).

Gravity data from USGS pubished mapping (Langenheim and others, 2002).

Topography from USGS National Elevation Dataset (30-m resolution). Bathymetry from Degnan and others, 2001 (30-m resolution)

southeastward to near Spreckels. Cross Section C-C' (Figure 2.12c) is a modified version of a cross section by Geoconsultants (1996), with the area extended approximately 7 miles offshore and 4 miles northeastward to include the Fred Ash No. 2 wildcat oil well. The following descriptions discuss data for key wells used to constrain the cross sections.

Bayside Development Vierra 1 — According to CDOGR records, General Petroleum spudded this well in November 1944, drilling it to a depth of 5,739 feet. At that point Bayside Development took over the drilling, deepening the well to 7,818 feet, then abandoned it in February 1945. Lithologic picks are from e-logs, scout notes, Starke and Howard (1968), an unpublished correlation sheet by G.L. Harrington (1945), and unpublished data from the California Division of Mines and Geology (written communication to J.C. Clark, dated December 1967). The well never reached basement to its drilled depth.

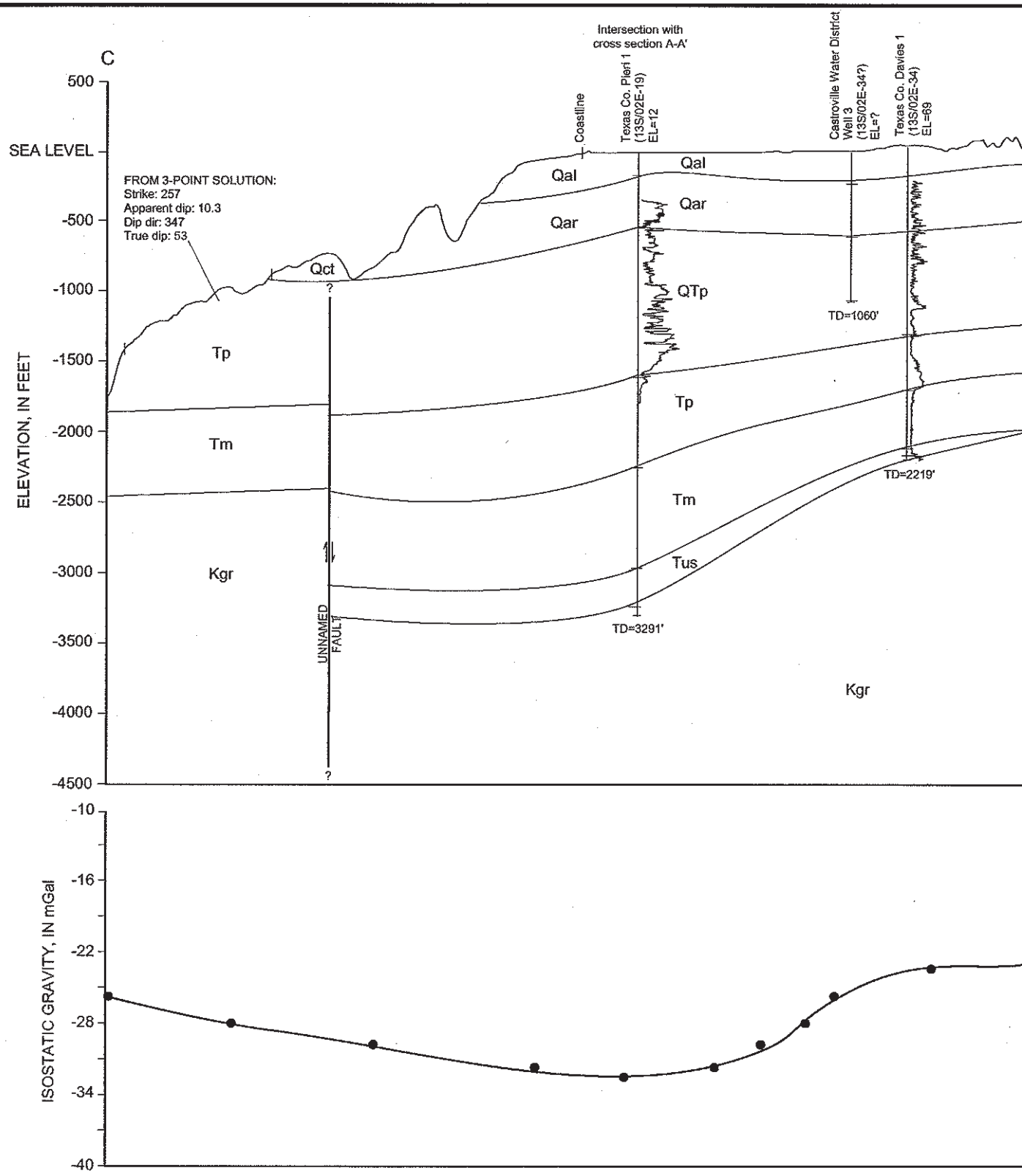
California Water Service 40-01 — This well was drilled in November 1983 to a depth of 912 feet. Picks are based on the DWR drillers log and an e-log. This well bottomed in the Paso Robles Formation.

Castroville Water District 3 — No drillers log was available for Castroville Water District Well 3. Picks were from an e-log contained in a report by Geoconsultants (1996). The well is 1,060 feet deep and bottoms in the Paso Robles Formation.

Elba Capurro — The Elba No. 1 well was drilled to a depth of 3,970 feet in April 1937 and abandoned in February 1939. There are no driller or geophysical logs of this well in CDOGR files. Picks were from a scout report (Gribi, E.A., and unpublished notes), a micropaleontology report (Goudkoff, P.P., 1937), an unpublished e-log (which shows a total depth of 4,009 feet, and unpublished paleontology records (Brabb, E.E., written communication, 2002). Of interest is a letter in the CDOGR files from the Deputy Supervisor of the Division of Oil and Gas, dated November 22, 1938, which reports fresh water to a depth of 1,280 feet, below which is brackish to salt water. The well never reached basement to its drilled depth.

Fort Ord D — The Fort Ord D well was drilled by Geotechnical Consultants to a depth of 1,162 feet in January–February 1995. Lithologic picks are from the geologic log and e-log. The well bottomed in the Paso Robles Formation.

Fred Ash & Sons 2 — Local water well driller Fred Ash drilled this well as a wildcat oil play in September 1966. The well was drilled to 1,959 feet and bottomed in "sticky blue green shale" which we interpret as the Monterey Formation. CDOGR records state that no oil shows were observed and the well was capped with the intent of converting it into a water well. Stratigraphic picks are based on driller's log and an e-log annotated by R.R. Thorup.



SOURCES OF DATA

Geologic data compiled from published mapping (Hanson and others, 2002; Wagner and others, 2002; Rosenberg, 2001), oil well logs (CDOG files), unpublished scout reports (Gribi, E.A., Thorup, R.R.), unpublished micro-paleontology reports (Chevron, undated; Ingle, J.C., 1989; McDougall, K., 2001), water well logs (MCWRA, MCWD, and MPWMD files).

Gravity data from USGS pubished mapping (Langenheim and others, 2002).

Topography from USGS National Elevation Dataset (30-m resolution). Bathymetry from Degnan and others, 2001 (30-m resolution)

Marihart-Luckey 1 — The Marihart-Luckey well was drilled by R.R. Thorup as a wildcat oil well to a depth of 2,628 feet in November 1958. No oil shows were noted according to CDOGR records so the well was abandoned. The CDOGR Report on Proposed Operations notes that non-marine strata were encountered from surface to total depth, and that the age of the bottom was Pliocene. Based on regional geologic mapping, we interpret these rocks as belonging to the Pancho Rico Formation.

Marina Well Nos. 11 and 12 — Well No. 11 was drilled in November–December 1985 to a depth of 1,700 feet. Well 12 was drilled in November 1988 to a depth of 2,020 feet. Geologic reports by Geoconsultants (1986, 1989) and a paleontology report by Ingle (1989) were used for the picks. However, one important difference in interpretations is that Ingle interprets Well Nos. 11 and 12 as bottoming in Pleistocene sediments, whereas we interpret them as bottoming in the Purisima Formation. Our interpretation is based on correlating e-log markers from the USGS DMW-1 well and the statement by Ingle (1989, p. 5) that "many of the species have a broad Pliocene-to-Recent age range" which allowed us to relax the interpretation that these wells were strictly in Pleistocene sediments.

Monterey County Mulligan Hill #1 — This well was drilled as a test well to a depth of 1,809 feet in September–December 1976. Based on paleontologic analysis of ditch and bit samples, Thorup reported that the well bottomed in Monterey Formation (1983, plate 10).

Monterey Dunes #1 — This well was originally drilled March–May 1972 to a depth of 687 feet. Subsequently, in late January 1977, it was deepened to 1,724 feet. Picks are from drillers logs and e-logs. The well bottomed in what we interpret as Purisima Formation.

MPWMD FO-09 and FO-10 — Well FO-09 was drilled in August 1994 to a depth of 1,100 feet and Well FO-10 was drilled in September 1996 to a depth of 1,500 feet. Picks were from MPWMD Technical Memorandums 94–07 and 97–04 (Oliver, 1994, 1997). Although these reports show the wells bottoming in the Santa Margarita Sandstone, we interpret them as reaching the Purisima Formation based on review of preliminary cross sections by the logging geologist J.W. Oliver (MPWMD).

PG&E Leonardini #3 — This well is near the Pieri well and was used to refine the upper stratigraphy. The well was drilled February–May 1980 to a depth of 1,610 feet. Picks are from the DWR driller's report and an e-log.

Sand Bowl Metz — The driller log in the CDOGR records is scanty (0–565': surface sand, 565-1,160': shale, 1,160–1,430': sand, 1,430–1,890': sandy shale, and 1,890–2,151': basement rock). The CDOGR files also contain an e-log for this well. To supplement these data, we used the

driller's log and e-log from the nearby Monterey Sand Company water well (15S/01E-15P02) shown on Cross Section B–B' of Staal, Gardner & Dunne (1990).

Texas Co. Davies — Scout records reveal that the Davies well was drilled as a play based on geophysical methods (E.E. Gribi, unpublished data). The Davies well was drilled and abandoned in August 1949. The well reached a depth of 2,219 feet and bottomed in granitic basement. Picks were from an e-log annotated by R.R. Thorup; ditch, sidewall, and core sample logs; and scout records by Gribi. Only the sidewall and core sample data are in the CDOGR files. Thorup's e-log notes show "Purisima" extending from 1,320 to 1,680 feet. Also of interest is a note on the CDOGR Well Summary Report, which lists the fresh water/salt water contact at 1,690 feet depth.

Texas Co. Pieri — The Pieri well was drilled and abandoned in August 1949 to a depth of 3,291 feet. Picks are from CDOGR records and an e-log. The well reached basement.

Western Gulf Johnson 1 — The Johnson 1 well was drilled in November–December 1932 to a depth of 3,198 feet. No records for this well were available from CDOGR. The picks were made from the Western Gulf Oil Company oil well log (dated February 17, 1933) and a Standard Oil Company of California paleolog (dated January 27, 1953). The well bottomed in granitic rock.

USGS DMW-1 — The USGS well is the most recent (2000) and most detailed well in the deep aquifer. Core samples, geophysical logs, and paleontologic analysis show that this well encountered a thick section of Purisima Formation. Picks are from Hansen and others (2002).

AQUIFER PARAMETER AND HYDRAULIC RELATIONSHIPS

Aquifer parameter data are limited. Transmissivity values are available from a few wells where formal aquifer tests were performed at the time of well completion. Additional transmissivity data can be estimated from specific capacity data utilizing the Logan approximation (Logan, 1964). Hydraulic conductivity data from slug testing are available for the four separate completions of the USGS monitoring well. Hydraulic conductivity tests are also available for a few sidewall cores from MCWD Well 10. No formal estimates of storativity have been advanced. The available aquifer parameter data are presented in Table 2.2.

Table 2.2 Aquifer Parameter Data

State Well No.	Name	Method	Screen Length (feet)	Transmissivity (gpd/ft) tested	Transmissivity (gpd/ft) estimated	Hydraulic Conductivity (ft/day)
T13N/R2E-19Q03	PG&E/Leonardini	SC	270		12,755	6.3
T13N/R2E-32M02	Sea Mist	SC	810		23,789	3.9
T14N/R2E-06L01	Co. of Monterey	SC	660		32,606	6.6
T14N/R2E-24L05	DMW-1-4	slug	20		359	2.4
T14N/R2E-24L04	DMW-1-3	slug	20		2086	13.8
T14N/R2E-24L03	DMW-1-2	slug	20		1137	7.6
T14N/R2E-24L02	DMW-1-1	slug	40		4338	14.5
T14N/R2E-30G03	MCWD No. 12	Pumping	240	29,700		16.5
T14N/R2E-32D04	MCWD No. 11	Pumping	200	24,300		16.4
T14N/R2E-31H01	MCWD No. 10	Pumping	210	40,000		25.4
T14N/R2E-31H01	MCWD No. 10 @ 842	lab	--	--	--	4.6
T14N/R2E-31H01	MCWD No. 10 @ 1460	lab	--	--	--	0.6
T13N/R1E-25R01	Mty Dunes Colony #3	SC	60		9,091	20.2

Methods: SC – Logan Approximation Pumping – Pumping test
Slug – Slug test Lab – sidewall sample in laboratory

WELL INTERFERENCE TESTS

MCWD Well Nos. 10, 11, and 12. In order to supplement the available aquifer parameter data and to better understand the interactions between MCWD wells for modeling purposes, a well interference test was performed. Each MCWD well was equipped with a water level data logger. Each of the wells was shut down for a week while the other two wells met system demand. The results of the test are presented in Figure 2.13.

Well No. 12 was shut down for the first week followed by Well 10 for the second week and Well No. 11 for the third week. During Week One, the Well No. 12 water level record displayed a conventional recovery response. The recovery curve was undisturbed by interference with other wells although the operational cycles of Well Nos. 10 and 11 during this period are obvious in their records. Well No. 10 was off for Week Two. Well No. 10 also showed a recovery curve; however, this curve was disturbed with a classic interference signature, corresponding to the operations of Well No. 11. During the third week and part of the fourth, Well No. 11 was off. Again, the recovery curve of this well was disturbed with the interference signature from Well No. 10, demonstrating the mutual interference between Well Nos. 10 and 11.

The interference between Well Nos. 10 and 11 is relatively consistent with the expected theoretical response utilizing the available aquifer parameters. The lack of measurable response in Well No. 12 suggests that this well is not in hydraulic communication with Well Nos. 10 and 11. The observed and predicted responses are presented in Table 2.3.

Figure 2.13 Well Interference Testing for MCWD Wells Nos. 10, 11, and 12

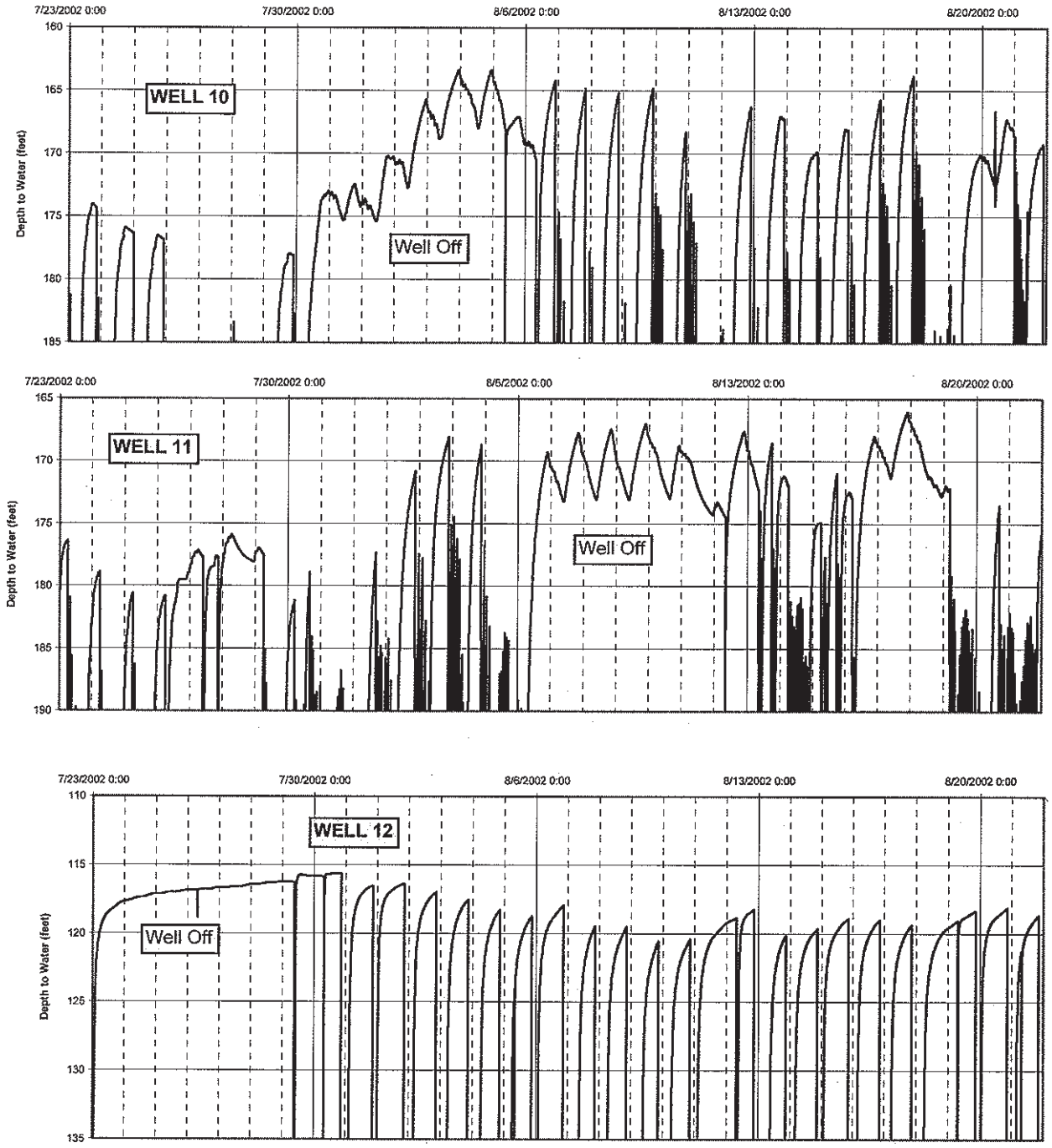


Table 2.3 The Observed and Theoretical Response from MCWD Wells

Wells	Distance (feet)	Discharge Rate (gpm)	Observed Drawdown Response (feet)	Theoretical Drawdown Response (feet)
Well 10 on 11	2,850	1,500	3	8.1
Well 11 on 10	2,850	1,800	5	9.7
Well 10 on 12	5,650	1,500	0	2.7
Well 11 on 12	3,950	1,800	0	6.1

Assumptions: Convention Theis Analysis, Transmissivity 31,000 gpd/ft, Storativity 0.0001, 0.25 days
Note: Storativity is assumed and regional leakage could not be determined due to insufficient data

The difference between observed and theoretical responses likely derives from the fact that each aquifer from which these wells produce is more accurately an aggregation of smaller aquifers, making invalid some of the assumptions required for theoretical prediction. Still, the magnitude of the observed interference in Well Nos. 10 and 11 is consistent with predicted responses. The lack of any interference response to the combined pumping of Well Nos. 10 and 11 on Well 12 is significant, suggesting hydraulic isolation of this well relative to the other two. This finding is consistent with the geologic interpretation that places Well No. 12 in the Purisima Formation, whereas Well Nos. 10 and 11 are largely in the Paso Robles Formation.

Close inspection of the recovery record of Well No. 12 shows minor variations in water levels superimposed on the recovery curve. Closer inspection of these data (Figure 2.14 the variations are a tidal signature that correlate directly with the tides in Monterey Bay.

USGS Monitoring Well verses MCWD Well No. 12. Three of the four wells at the USGS Monitoring Well are completed in the Purisima Formation (USGS, 2002). Geologic interpretation and the well interference data indicate that MCWD Well No. 12 is also completed in the Purisima Formation. Figure 2.15 compares water level data collected at the four USGS monitoring wells with data collected from Well No. 12 during the Well Interference exercise described above. Most evident in Figure 2.14 are the strong tidal signature in all of the USGS wells, and the strong correlation and lack of lag time with tides in Monterey Bay. Comparison of the pumping schedule of Well No. 12 and the water level records of the four monitors suggests a response in the deepest monitor (DMW-1-1), corresponding to the shut down and start-up of Well No. 12. There is a similar, although more subdued, response in the next deepest well (DMW-1-2). No evidence of response is apparent in the other two monitors (DMW-1-3 and -4). These results appear consistent with the perforated elevations of the monitoring wells and Well No.12. The latter is perforated between elevations -1283 to –1833

Figure 2.14 MCWD Well No. 12 -- Idle Period Record

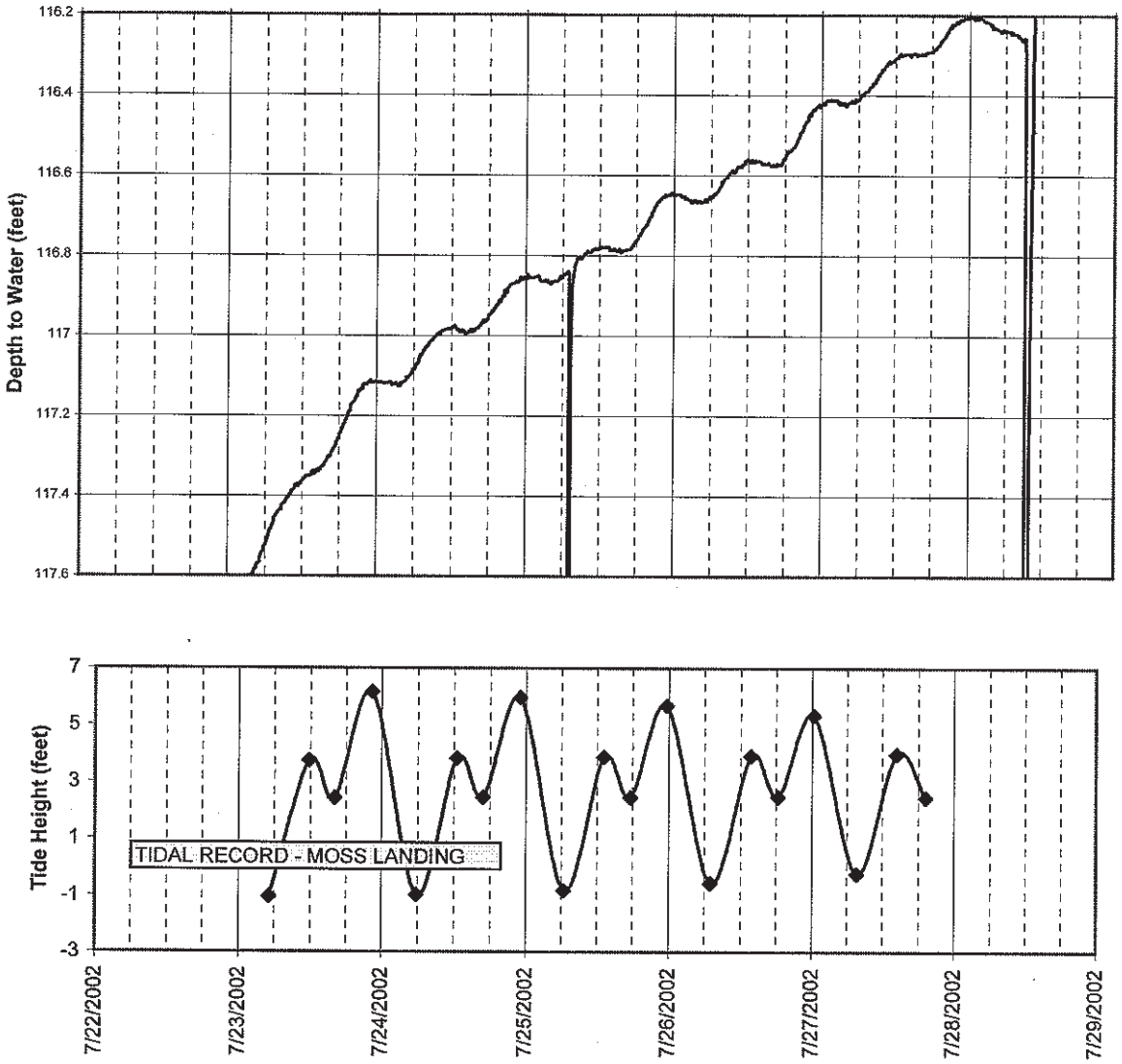
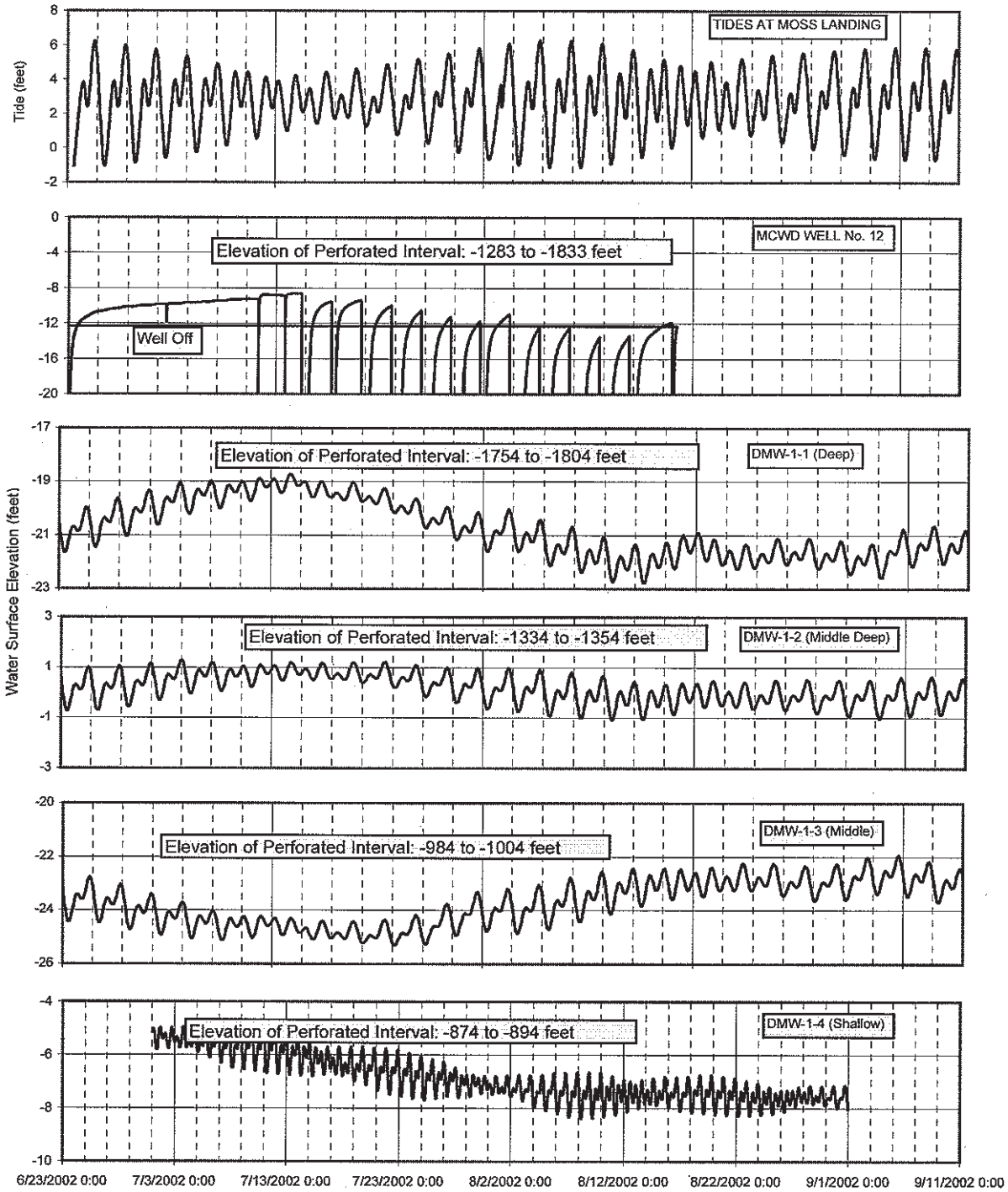


Figure 2.15. USGS Monitoring Well vs. MCWD Well No. 12



Figures\Fig 15-USGS_12l

feet, whereas DMW-1-1 and DMW-1-2 are perforated at elevations -1754 to –1804 feet and -1334 to -1354 feet, respectively.

TIDAL FLUCTUATIONS

As noted above, the USGS monitoring wells, as well as other wells, all show a strong tidal signature. The water level data reveals no evidence of a significant time lag between the ocean and aquifer response. Because of the lack of lag time, it is speculated that the response is the result of cyclic loading of the aquifer, rather than hydraulic fluctuations at a possible outcrop.

Assuming cyclic loading, the tidal response data can be utilized to calculate a storage coefficient for these aquifer units. The ratio of aquifer water level change to tidal change is the tidal efficiency of the aquifer. In all four wells, the aquifer response is approximately 2 feet of change in response to 6 feet of tidal fluctuation, or a ratio of 0.33. Tidal efficiency can be related to storage coefficient utilizing the following equation (Lohman, 1972):

$$S = \theta \rho b \beta \, (1/1\text{-}TE)$$

Where:	θ = porosity	= 0.3
	ρ = specific weight of water	= 0.434 lbs/in^{2}ft
	b = aquifer thickness	= 20 feet
	β = Inverse of water elasticity	= 3.3 x 10^{-6} in^2/lb
	TE = tidal efficiency	= 0.33

Utilizing these values, a specific storage coefficient of 1.3 x 10^{-5} (dimensionless) can be calculated, a value considered very appropriate for confined conditions. This value is lower than that estimated from the well interference analysis. However, this value is not influenced by leakage effects that may be moderating drawdown at the production wells. For this reason the value derived from the tidal data may be more appropriate for the aquifer system as a whole.

IMPLICATIONS OF HYDROGEOLOGIC FINDINGS

Taken together, the overall conclusion that can be derived from the collected data and the preliminary analysis is that the deep aquifers from which MCWD extracts its water supply is actually two separate aquifer systems. Existing geologic and water chemistry data suggest that MCWD Well Nos. 10 and 11 produce primarily from the Paso Robles Formation, whereas MCWD Well No. 12 produces from the Purisima Formation. In contrast, the deep aquifers wells in the Castroville area are interpreted to produce from the Paso Robles Formation. Aquifer response data suggests these two aquifer systems are hydraulically isolated from each other.

RECHARGE CONSIDERATIONS

The hydrogeologic interpretation of the deep aquifers raises questions regarding the nature and magnitude of recharge to these aquifers. Well No. 12 is completed in and produces primarily from the Purisima Formation. The Purisima Formation is not exposed on land in Monterey County. The closest land exposure is in Soquel where the Formation is the primary source of water for the Soquel Creek Water District. Therefore, recharge for the Purisima Formation (Well 12) is primarily leakage from overlying aquifers. Some portions of extractions may be supported by depletion of groundwater storage. However, the low estimates for storage coefficients for this aquifer system suggest that the volume of groundwater that can be removed from storage is not large.

The Paso Robles Formation crops out extensively throughout the Salinas Valley region. However, in most locations, the Formation underlies the Salinas Valley alluvium and Aromas Sands that comprise the 180-foot aquifer and upper portion of the 400-foot aquifer. The alluvium receives recharge primarily from the river and irrigation return flows. In areas where Paso Robles is overlain by alluvium, recharge is from leakage from overlying aquifers.

There are 37,500 acres of Paso Robles Formation exposed in Monterey County. Of this area, 33 percent (or 12,400 acres) is exposed in the El Toro–Laguna Seca Area where the Formation constitutes as recharge area for these areas. The remaining acreage of Paso Robles Formation is exposed on the west side of the Salinas Valley. However, much of this area is in the rain shadow of the Santa Lucia Range. Annual rainfall on the outcrop areas is less than 12 inches. With this limited rainfall, direct recharge to the outcrops of Paso Robles Formation from precipitation is minimal, if any. Given the hydrogeologic setting, extractions from the Paso Robles Formation also appear to be primarily supported by leakage from the overlying shallow aquifer system.

The implications regarding recharge mechanisms are generally supported by the water level history of MCWD wells. All three of MCWD wells show a similar water level history: a rapid decline as local storage is depleted, then a stabilization as extractions equilibrate with leakage. This interpretation is best evaluated by modeling.

SECTION 3 SALINAS VALLEY INTEGRATED GROUND AND SURFACE WATER MODEL (SVIGSM) UPDATE

The purpose of this section is to describe the development of the SVIGSM, its applications in various studies, the modifications made to the deep aquifer layer of the model and any related changes to the hydrogeologic parameters, and the summary results of recalibrating the model.

The section is divided as follows:

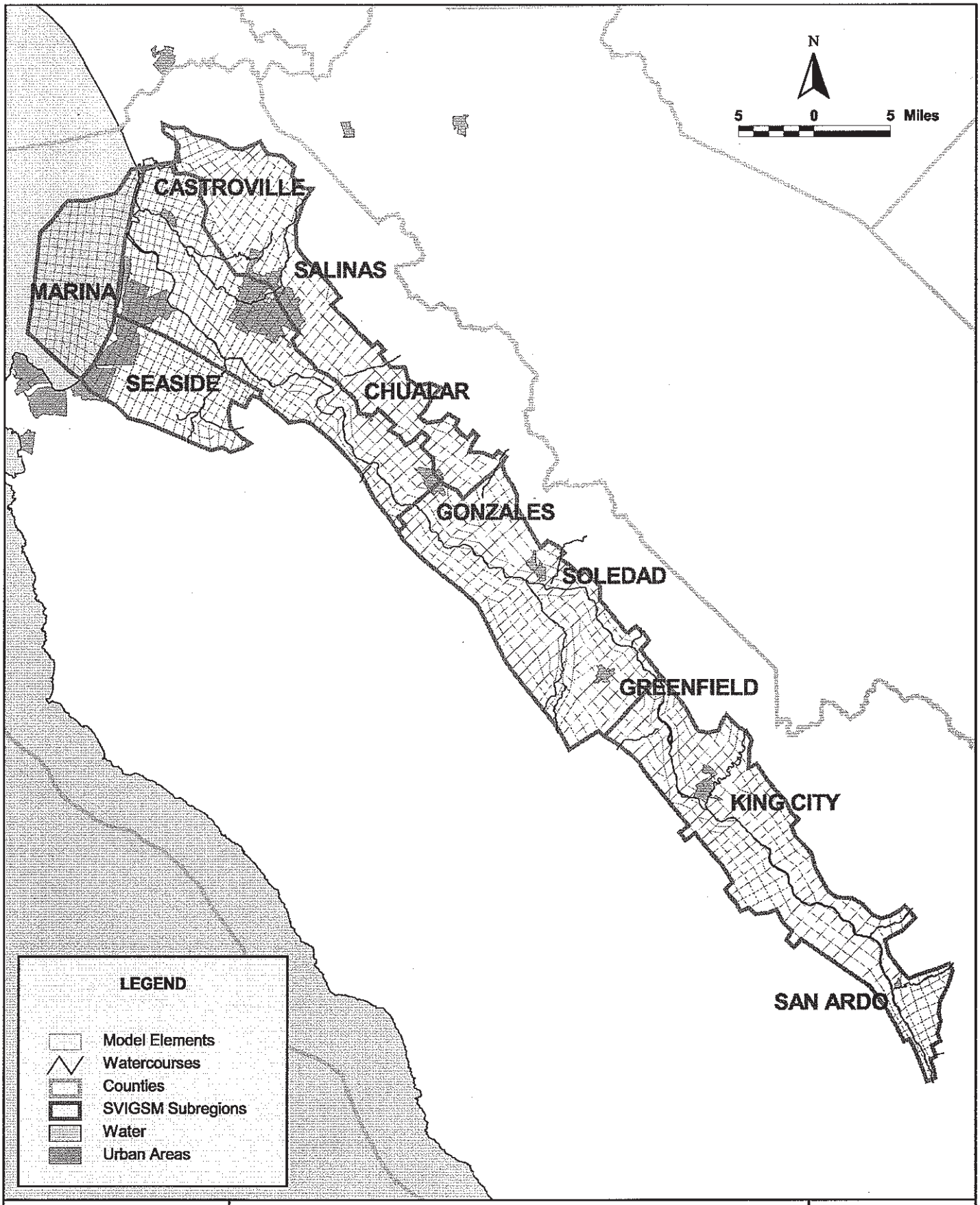
- SVIGSM Background provides information about the development of the model, updates and modifications to the model in the last 5 years, capabilities of the model, and applications of the model;
- Code Update provides information about older and recently released IGSM codes and the impacts of the code update on model results;
- Data Update provides information about the impacts on the model simulation due changes in model stratigraphy and the efforts to mitigate those impacts.

Model results presented in Section 3 are associated with historical water years 1959 through 1994, representing the historical record of when the Salinas River was regulated.

SVIGSM BACKGROUND

The SVIGSM is the most recent analytical tool that analyzes the hydrologic conditions in the Salinas Valley groundwater basin. Prior to the development of SVIGSM, there were two significant modeling efforts at a basin-wide level. The first model was developed in 1978 by the USGS and the second model was developed in 1986, based on the predecessor to IGSM, the FEGW14. Both models focused on the groundwater flow in the basin, and had limited interaction with the surface processes. The previous modeling efforts did not consider the special importance of the hydrologic processes of the Salinas Valley groundwater system with respect to land and water use processes and daily rainfall and runoff in the main watershed and tributary watersheds, and to the regulation of Salinas River flows by Nacimiento and San Antonio Reservoirs.

The SVIGSM, developed in 1993, utilized the databases from the previous modeling efforts with significantly additional data developed as part of the Salinas River Basin Management Plan (BMP). The model development is documented in the report on BMP Task 1.09 (Montgomery Watson, 1995). The SVIGSM model network is shown in Figure 3.1.



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MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

SVIGSM Model Grid

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FIGURE 3.1

The SVIGSM has gone through substantial updates and revisions since its initial development. These updates are reported in the *Salinas Valley Integrated Ground Water and Surface [water] Model Update* (Montgomery Watson, 1997), *Salinas Valley Historical Benefits Analysis (HBA)* (Montgomery Watson, April 1998), and *Update of the Historical Benefits Analysis (HBA) Hydrologic Investigation in the Arroyo Seco Cone Area: Monterey County Water Resources Agency* (Ali Taghavi and Associates, February 2000). The following summarizes the data and model revisions performed as a result of these studies. The reader is referred to the individual reports for additional discussion.

The following was specifically revised as a result of the 1997 work:

1. 1989/1991 land use and irrigated crop acreages were included;
2. assumptions associated with the Truck crop acreages that remain idle during crop rotation were finalized and included in the model;
3. the vegetation corridor along the Salinas River was coded as riparian as opposed to native vegetation;
4. distribution of hydraulic conductivity was modified; and
5. aquifer parameters were revised to ensure the proper calibration of model results to the historical groundwater conditions for the period from October 1969 to September 1994.

The following was specifically revised as a result of the April 1998 work:

1. the October 1969 to September 1994 simulation period was extended to October 1949 to September 1994;
2. land use and irrigated crop acreages were updated to reflect the lengthened simulation period;
3. crop evapotranspiration and irrigation efficiencies were changed from a static data set to a transient data set to allow for changes in agricultural technology and techniques over the 50-year simulation period;
4. urban water demand and surface water diversions were updated to reflect the lengthened simulation period;
5. groundwater pumping distribution was updated to reflect the lengthened simulation period and to reflect changes in land development over that time;
6. specific capacities and hydraulic conductivities in the Arroyo Seco Cone area were updated based on studies conducted by others;

7. soil parameters were adjusted to provide better consistency and to improve the overall water balance of the valley; and

8. model simulation results were verified with observed data.

Figure 3.2 shows the location of calibration wells used in the 1998 work. Figures 3.3a through 3.3e show a statistical evaluation of the SVIGSM (v. 4.18, 1998) calibration performance associated with the 1998 work.

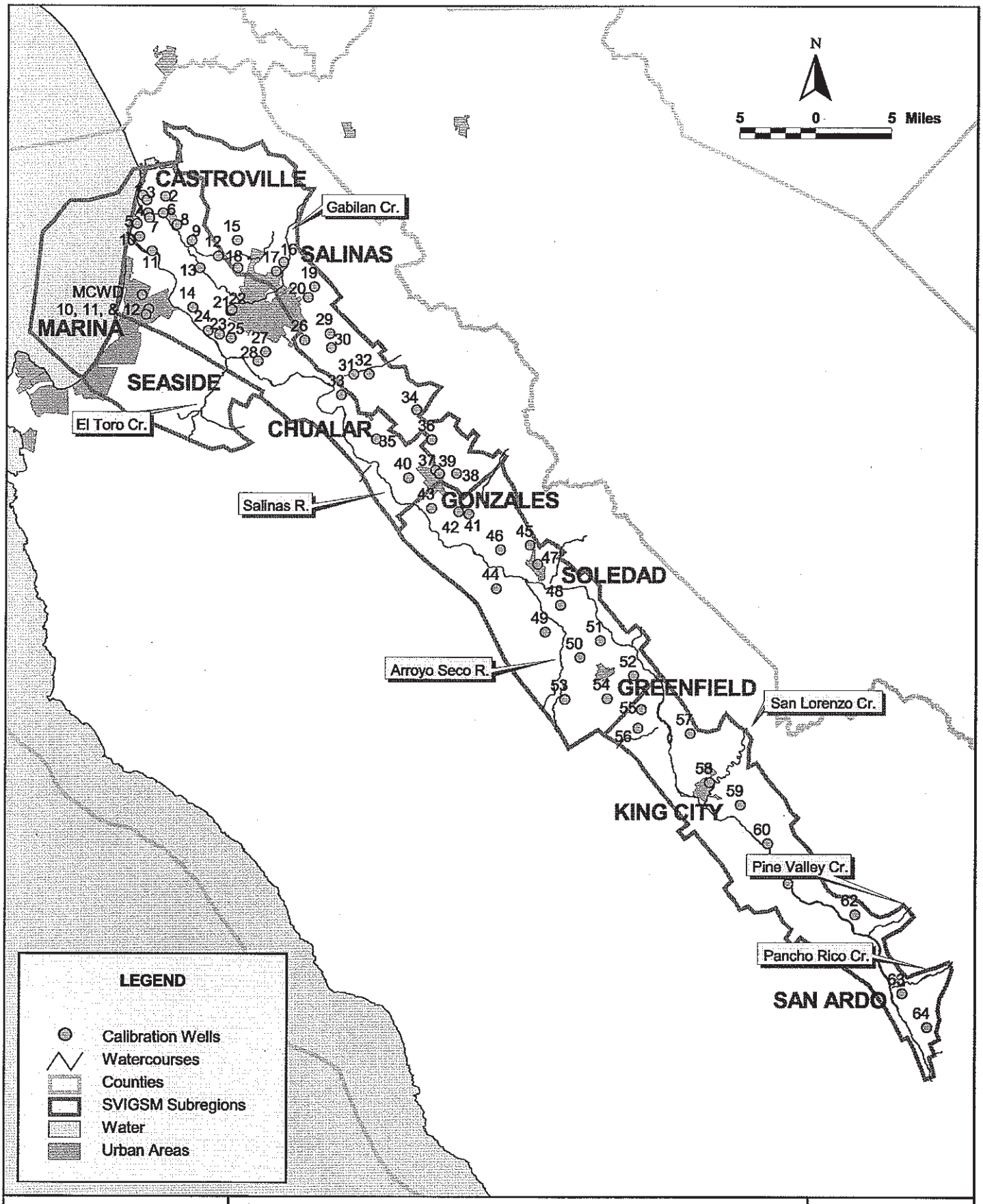
The following was specifically revised as a result of the February 2000 work:

1. the SVIGSM calibration in the Arroyo Seco Cone area was refined to include the latest streamflow and hydrogeologic data available, and

2. reservoir operation routine was revised to more appropriately simulate the potential diversions of the water from the Nacimiento reservoir by San Luis Obispo County, under the baseline and alternative scenario analyses.

The SVIGSM contained the following features as a result of these updates:

- Simulation of the vertical and horizontal groundwater flow in the Salinas Valley through water-bearing formations in the valley:
  - The 180-foot, 400-foot, and the Deep Aquifer in the Pressure subregion;
  - The East Side Shallow, East Side Deep, and the Deep Aquifer in the East Side subregion;
  - The Shallow and Deep Aquifers in the Forebay subregion; and
  - The unconfined aquifer in the Upper Valley
- Simulation of the Salinas River and its major tributaries from Nacimiento and San Antonio Reservoirs to the Monterey Bay;
- Simulation of the interaction of the Salinas River, and its tributaries, with the groundwater system;
- Simulation of Nacimiento and San Antonio Reservoirs based on specific operational rules for water supply and flood control;
- Simulation of reservoir operations that can satisfy those diversion requirements that derive from water rights and environmental flow requirements;
- Simulation of the rate and extent of seawater intrusion;



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DEEP AQUIFER INVESTIGATIVE STUDY

Location of Calibration Wells

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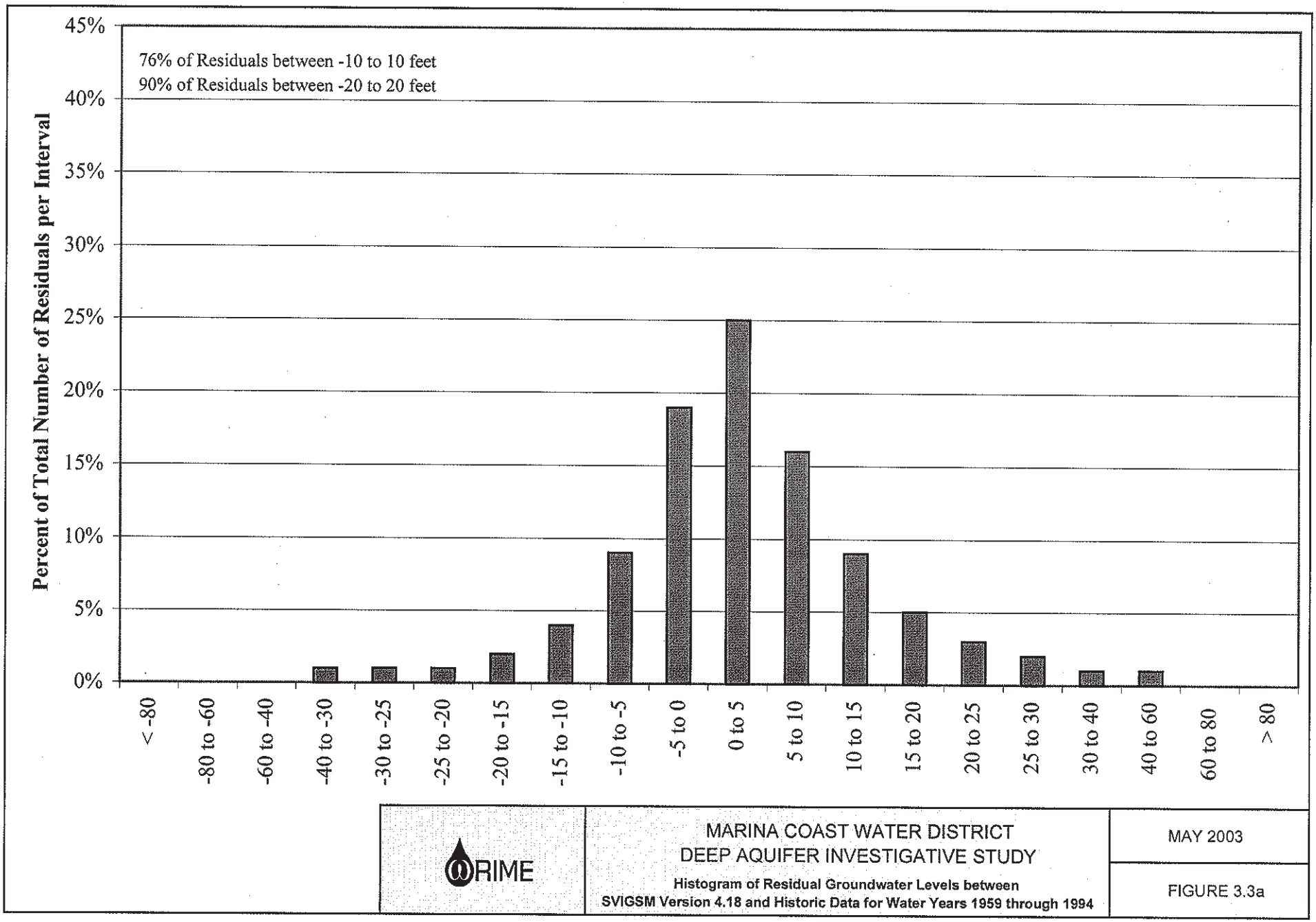
FIGURE 3.2



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Histogram of Residual Groundwater Levels between SVIGSM Version 4.18 and Historic Data for Water Years 1959 through 1994

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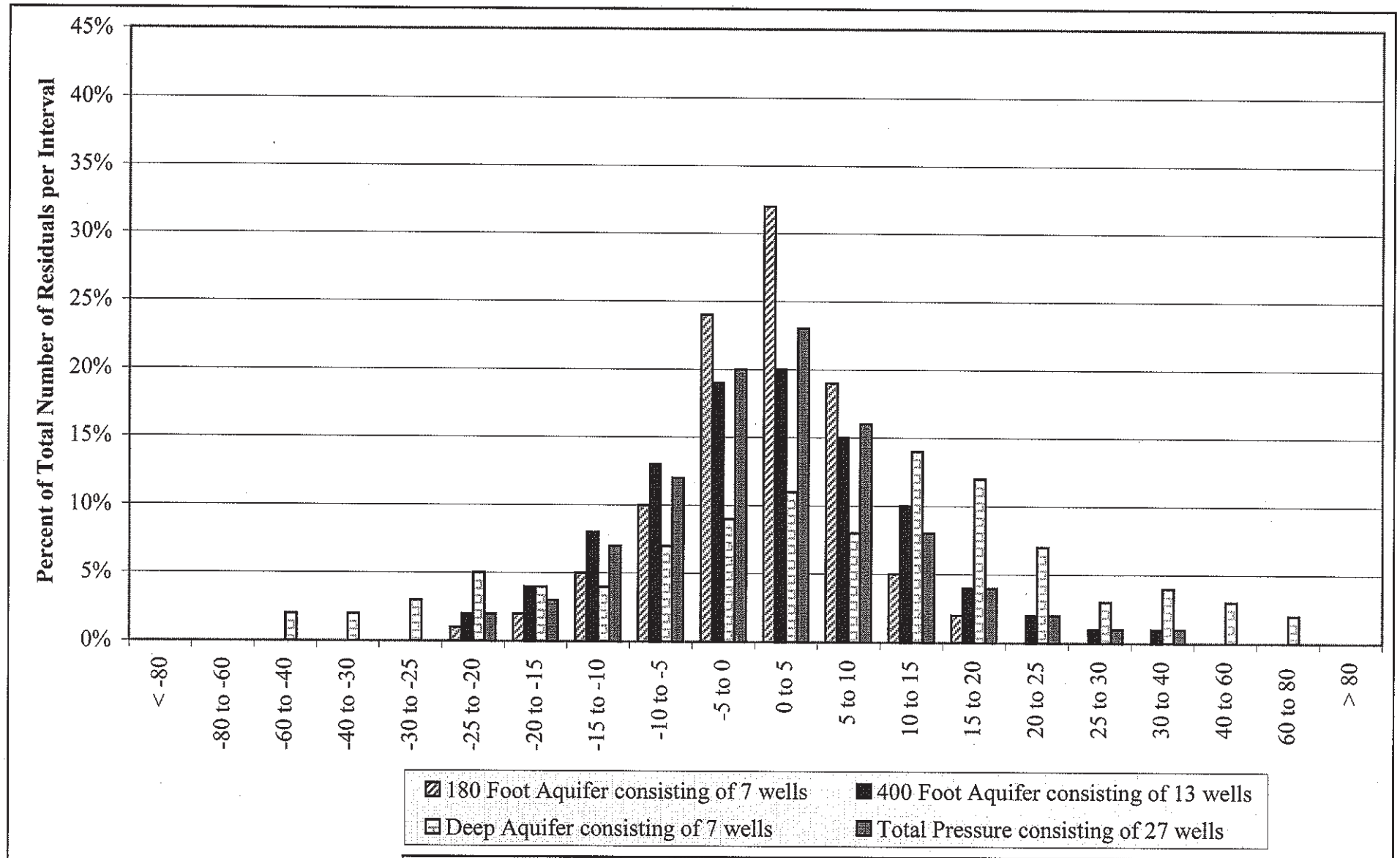
FIGURE 3.3a



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Histogram of Residual Groundwater Levels between SVIGSM Version 4.18 and Historic Data in Pressure Subarea for Water Years 1959 through 1994

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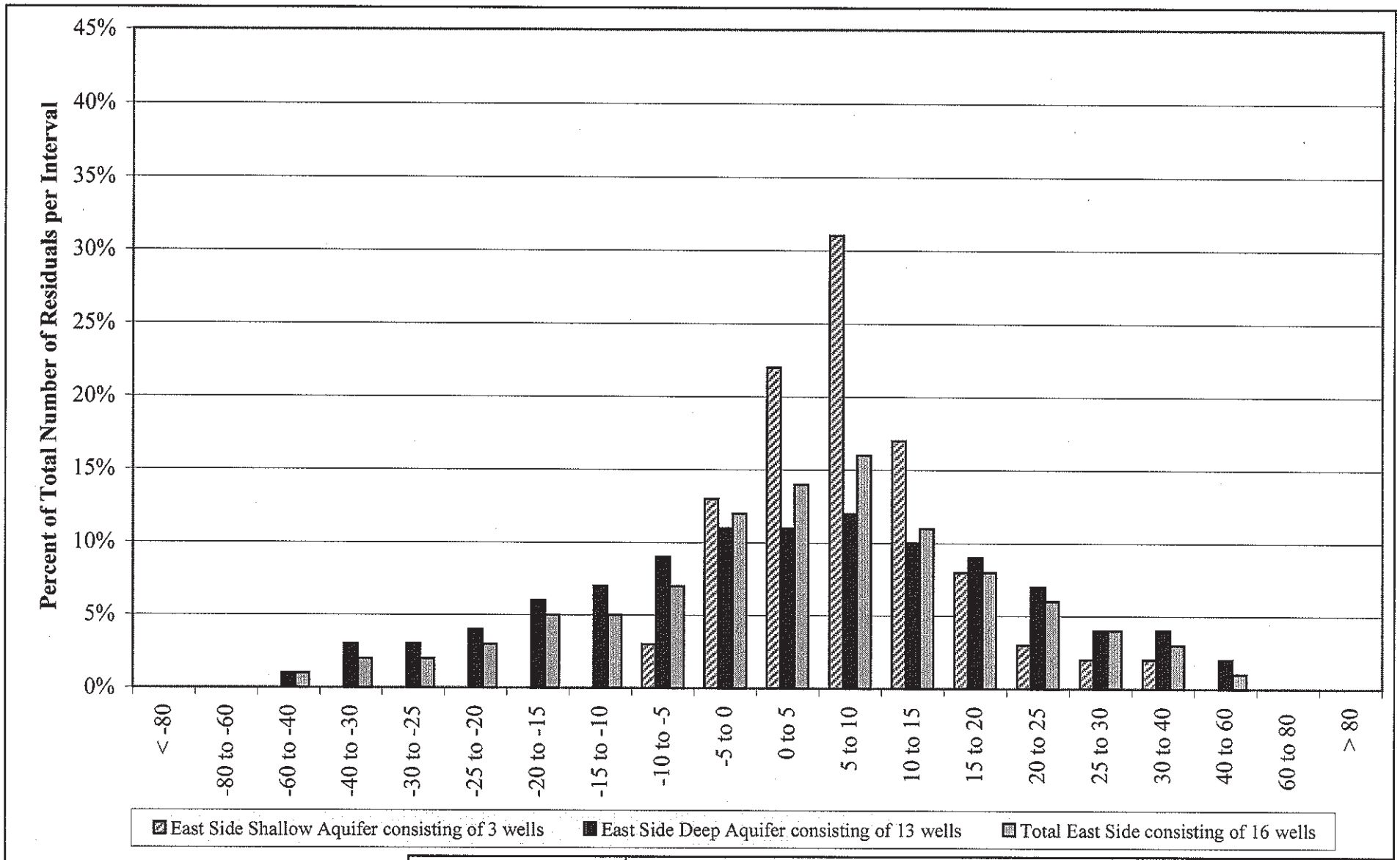
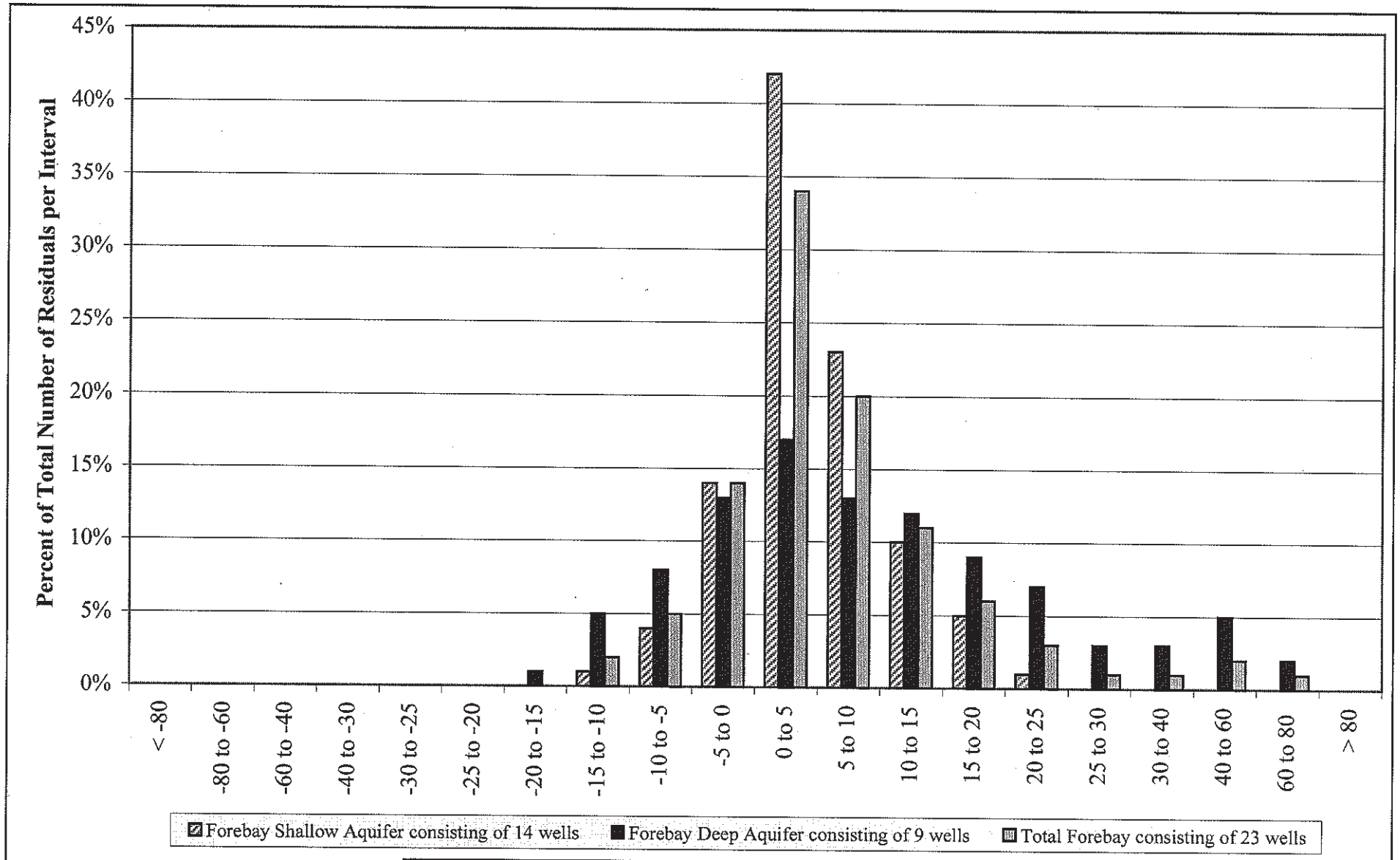
FIGURE 3.3b



ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Histogram of Residual Groundwater Levels between SVIGSM Version 4.18 and Historic Data in East Side Subarea for Water Years 1959 through 1994**	MAY 2003 FIGURE 3.3c



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DEEP AQUIFER INVESTIGATIVE STUDY

Histogram of Residual Groundwater Levels between SVIGSM Version 4.18 and Historic Data in Forebay Subarea for Water Years 1959 through 1994

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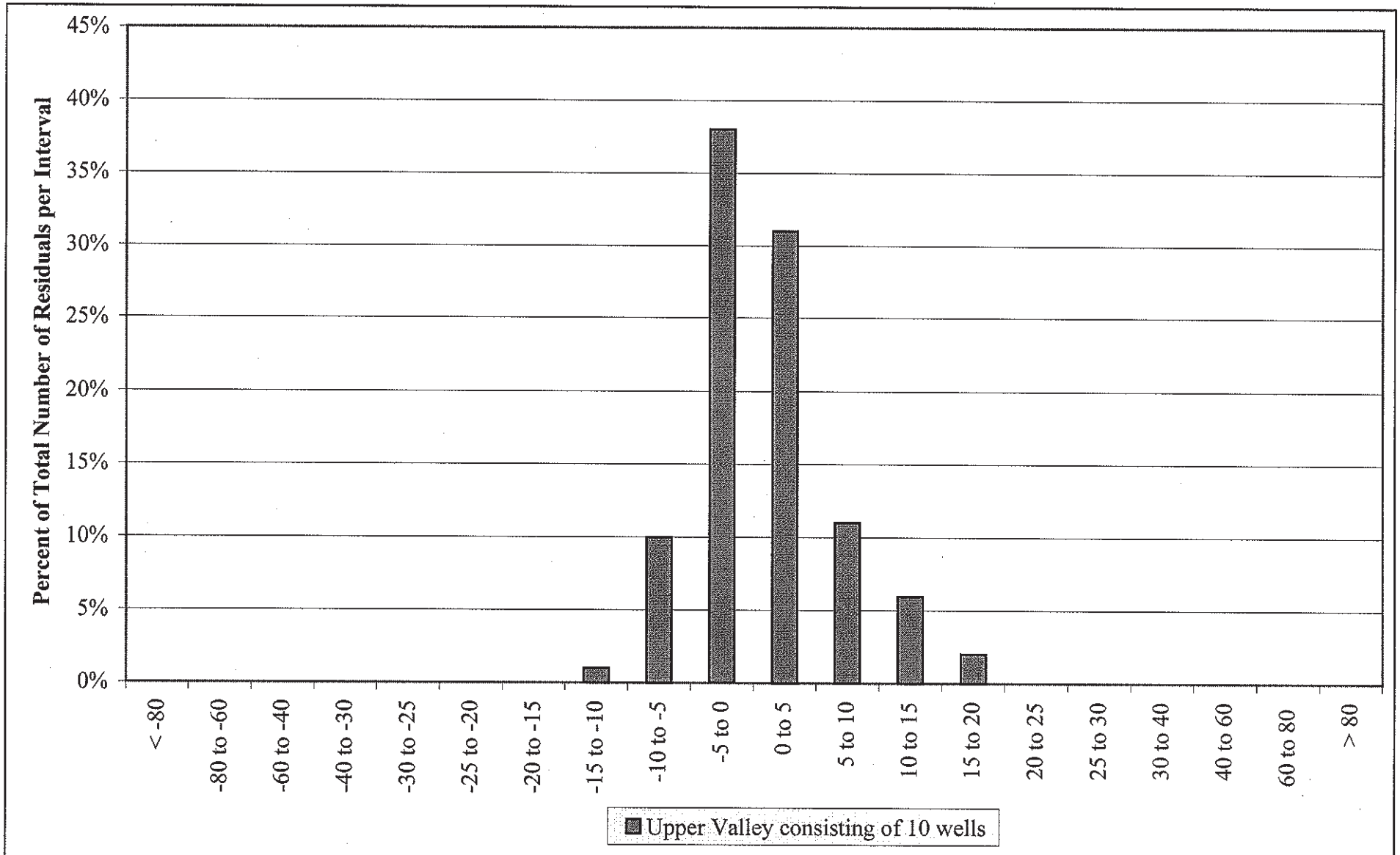
FIGURE 3.3d



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DEEP AQUIFER INVESTIGATIVE STUDY

Histogram of Residual Groundwater Levels between SVIGSM Version 4.18 and Historic Data in Upper Valley Subarea for Water Years 1959 through 1994

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FIGURE 3.3e

- Simulation of the agricultural water use requirements based on crop irrigated acreage, crop potential evapotranspiration, minimum soil moisture requirements, and crop efficiency; and
- Simulation of direct runoff and deep percolation from rainfall and irrigation applied water.

The SVIGSM model was developed to address basin-wide hydrologic and water supply operational issues. As such, the SVIGSM has been applied to many studies since its initial development:

- Evaluating the impacts of the Castroville Seawater Intrusion Projects;
- Providing a better understanding of the nature of the physical and hydrologic processes in the Salinas River Basin. This includes natural and operational factors that influence seawater intrusion and coastal groundwater flow from Monterey Bay;
- Analyzing the hydrologic impacts of the Salinas River Basin Management Plan so that sufficient information was provided for alternatives screening and preferred alternative selection;
- Conducting a Historical Benefits Analysis to identify and quantify the hydrologic, flood control, and economic benefits of Nacimiento and San Antonio Reservoirs;
- Analyzing the effects reservoir re-operation scenarios and
- Analyzing impacts of the Salinas Valley Water Project, a proposed project currently undergoing the final stages of environmental permitting process.

CODE UPDATES

IGSM was initially released in 1990 as part of the Central Valley Groundwater and Surface water Model (CVGSM). It has been modified over the years for different project applications; this resulted in different versions of IGSM as related to specific projects. In 2000, DWR initiated a study to combine into a single IGSM version all features from various versions used in local and statewide applications. This effort resulted in IGSM version 5.0, which is currently used in several modeling efforts throughout California. DWR initiated a review process of the IGSM 5.0 code and its application to California's Central Valley. This process resulted in refinement of several major modules of IGSM, including the groundwater simulation daily time-step, simulation of the stream-aquifer interaction based on non-linear methodology, and refined non-linear soil moisture accounting routine. These code refinements were released as a new version of the code: IGSM2 version 1.0 (December 2002). Currently IGSM2 does not provide simulation

capabilities for reservoir operations and multiple models. Also, it is not backwards compatible for datasets of earlier versions of IGSM. Due to the release schedule of IGSM2, as well as its limitations on simulation of reservoir operations and multi-model integration, the results of the DWR review were incorporated into a revised version of the original IGSM. This new version is released as beta version of IGSM version 6.0, which is being developed to meet specific project requirements for the conjunctive use projects under study by DWR, Alameda County Water District (ACWD), and East Bay Municipal Utility District (EBMUD) (WRIME, Inc. 2003). IGSM 6.0 simulates the groundwater and surface water flows and their interaction on a daily and/or monthly time-step; and has the option to simulate stream-aquifer hydraulic interaction using both linear and non-linear methods; and simulate general head boundary condition using both linear and non-linear methods. The program is also backward compatible with IGSM 3.2 and later versions. This version of IGSM is currently under final review and will be official released in June, 2003 then the project application for Stony Creek Fan Conjunctive Use project is complete. Therefore, IGSM 5.0 was selected for use in the Marina Coast study since it is the most recent, officially released version of IGSM possessing all the features needed to properly simulate hydrologic conditions in the Salinas Valley groundwater basin. It is anticipated that with the official release of IGSM 6.0, the conversion to IGSM 6.0 would be straightforward, requiring limited time to evaluate the calibration and make necessary refinements. Formal documentation of IGSM 6.0 and its application in Northern Sacramento Valley, California will be available in June 2003. Documentation regarding the application of IGSM 6.0 in Alameda County, California will be available by September 2003.

IGSM 5.0 is backwards compatible with IGSM 4.18, meaning that the data files developed for SVIGSM 4.18 are compatible with SVIGSM 5.0. As such, no modifications of the data file structure were necessary to use SVIGSM 5.0.

Several comparisons were made to measure the impacts of changing the IGSM code, without changing the geologic database of the model. These comparisons are:

1. change in groundwater levels between SVIGSM versions 4.18 and 5.0;
2. change in groundwater levels between observed groundwater levels and SVIGSM 5.0;
3. change in average annual coastal flow rate between the SVIGSM versions; and
4. change in average annual stream depletion rate between the SVIGSM.

In general changing the code did not result in any significant changes to the performance of the calibrated model.

SVIGSM DATABASE UPDATES

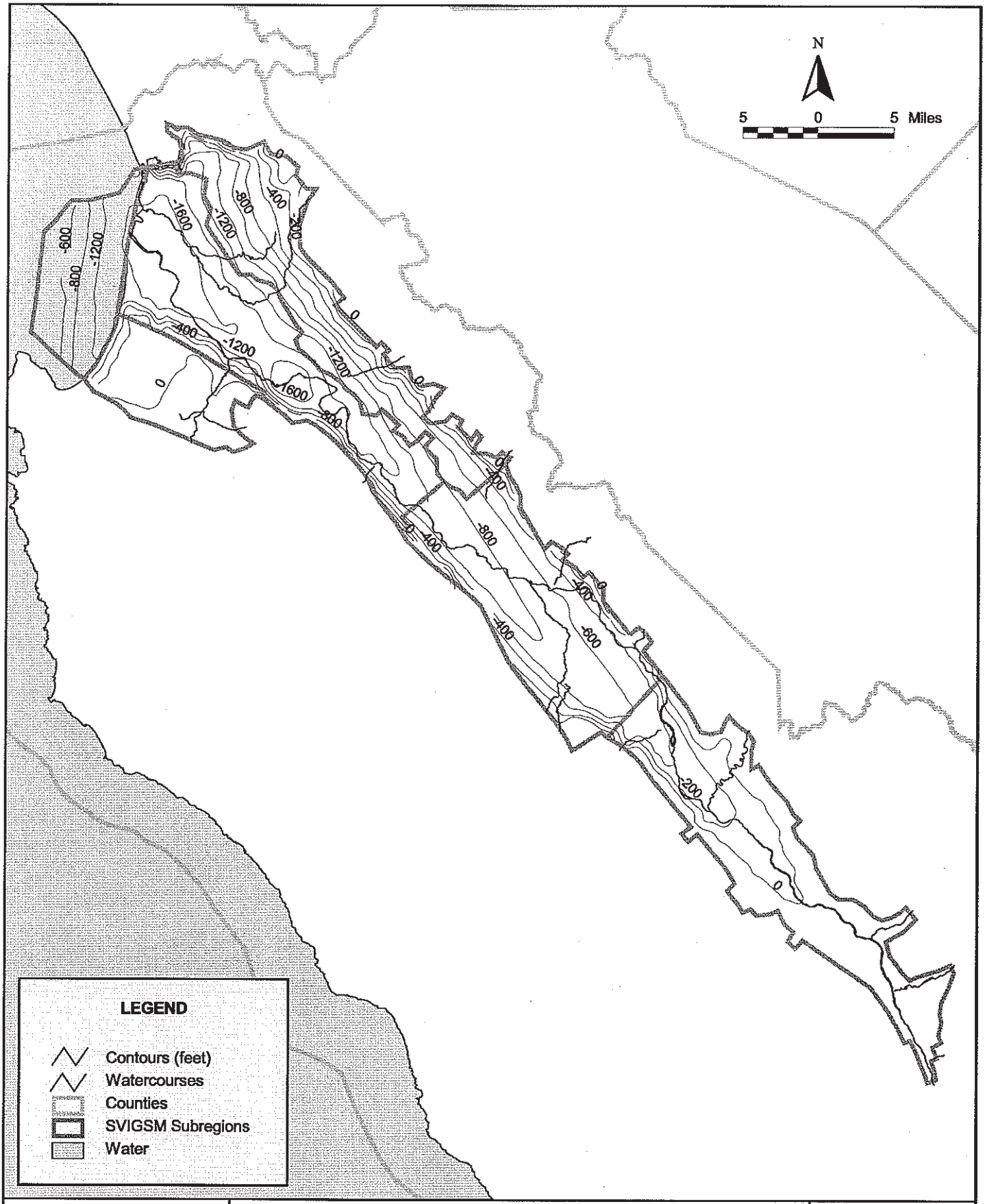
There were two major changes made to the SVIGSM database due to recently conducted studies. These changes, discussed in detail below, are in regard to the new interpretation of the deep aquifers and the capability of the Reliz Fault to inhibit groundwater flow.

DEEP AQUIFER MODIFICATIONS

As discussed previously, the Salinas River groundwater system was conceptually viewed as a three-layer aquifer system in the Pressure Subarea, a two-aquifer system in the East Side and Forebay Subareas, and a single aquifer in the Upper Valley. The deep aquifers or its hydrogeologic extensions were present in all subareas except for the Upper Valley. All data regarding the deep aquifers has been reviewed, analyzed, and incorporated into a new interpretation of the deep aquifers. Based on this new interpretation, the deep aquifers are better represented as two distinct aquifers. The new interpretation was included in the SVIGSM stratigraphy database. The SVIGSM revised stratigraphy data was developed using a Geographic Information Systems (GIS) process of contouring thickness and bottom elevation data, then attributing those contoured values to specific SVIGSM nodes; this process was discussed in Section 2 of this report.

Figures 3.4 through 3.8 illustrate the changes that have been made to the deep aquifers' geology and hydrogeology. Figure 3.4 shows the bottom elevation contours of deep aquifers prior to the recent study. Figure 3.5 shows the bottom elevation contours of upper deep aquifer (the Paso Robles Formation) as a result of this study's findings. Figure 3.6 shows the bottom elevation contours of the lower deep aquifer (the Purisima Formation). In order to properly simulate the hydraulic connection and leakance between the upper and lower deep aquifers, a 10-Ft aquitard is assumed between these layers. The thickness of this aquitard is not based on geologic data and information; rather it is for modeling purposes to provide better control in model calibration and simulation. Figures 3.7 and 3.8 show the total aquifer system for old stratigraphy interpretation and the new stratigraphy interpretation, respectively. Note that the total thickness of the revised deep aquifers is approximately 500 to 1,000 feet greater than the original thickness in the model. Without proper changes to the hydraulic conductivity distribution in the model, this additional thickness would impact the transmissivity of the aquifer system; this impact will be discussed in the next section.

Several stratigraphic cross-sections were developed for the revised model aquifer system. Figure 3.9 shows the location of geologic cross-sections developed as part of this effort; Figures 3.10a through 3.10h are the geologic cross-sections themselves..



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Bottom Elevation of Original Model Layer 3

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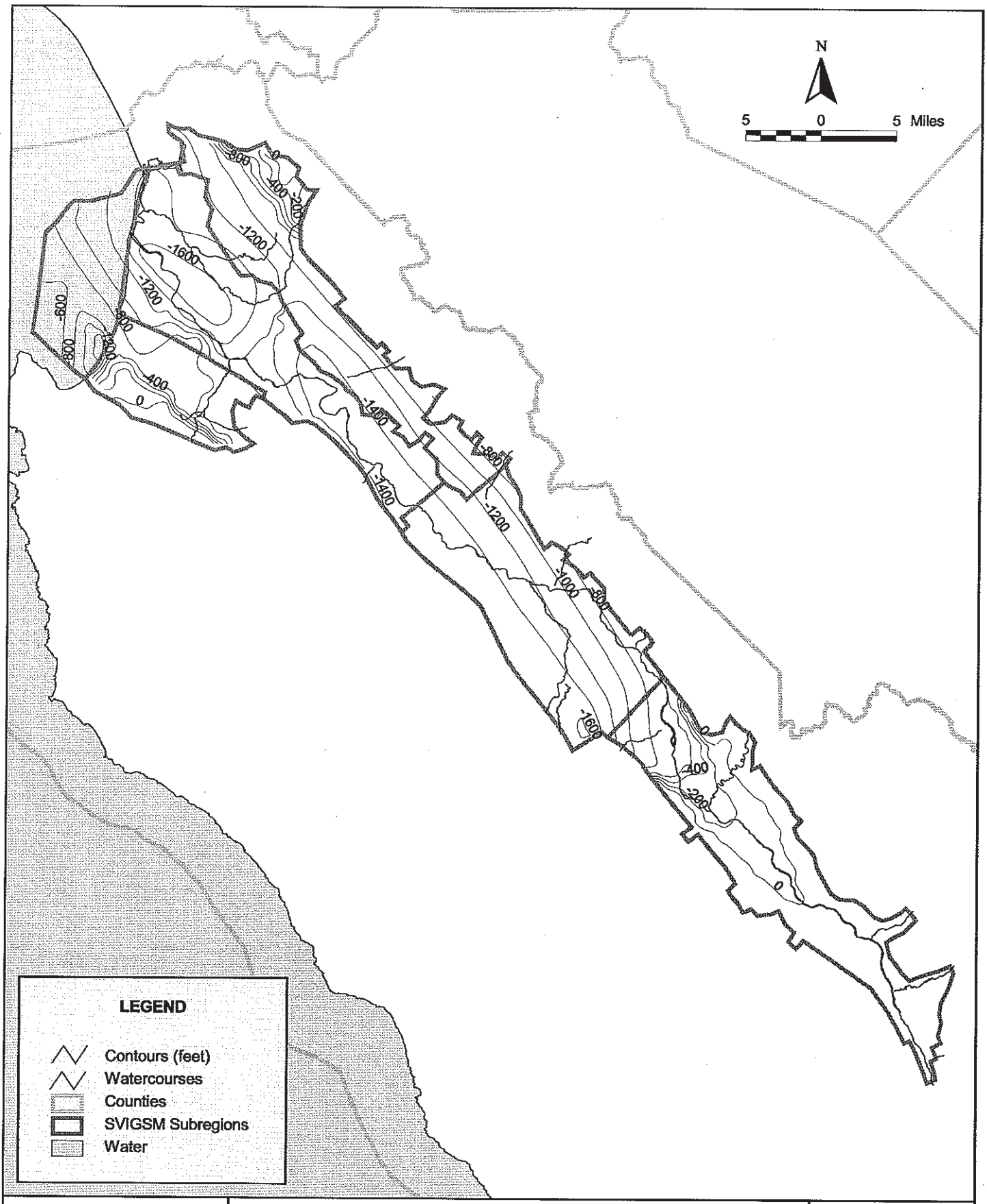
FIGURE 3.4



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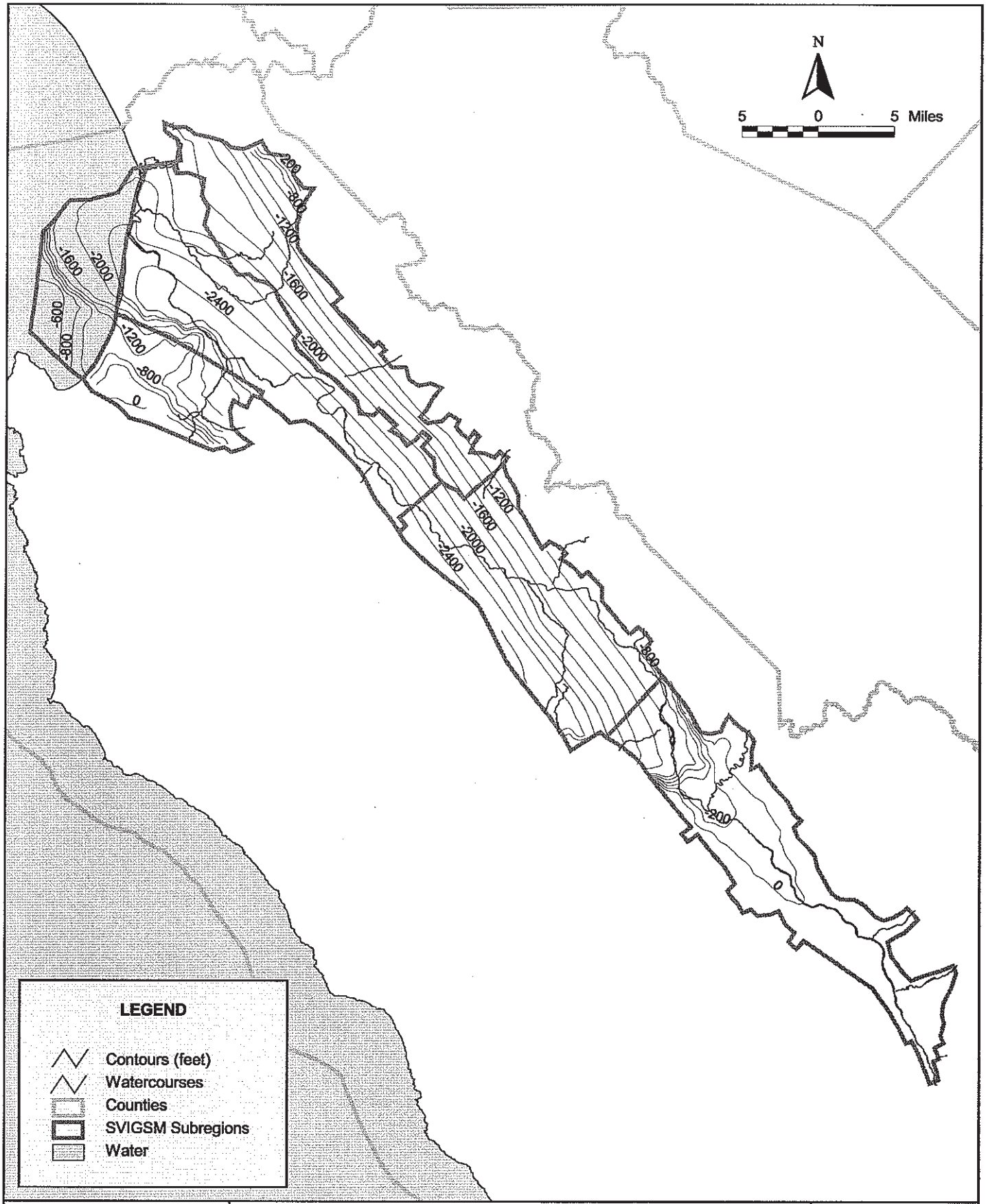
Bottom Elevation of Revised Model Layer 3

MAY 2003

FIGURE 3.5



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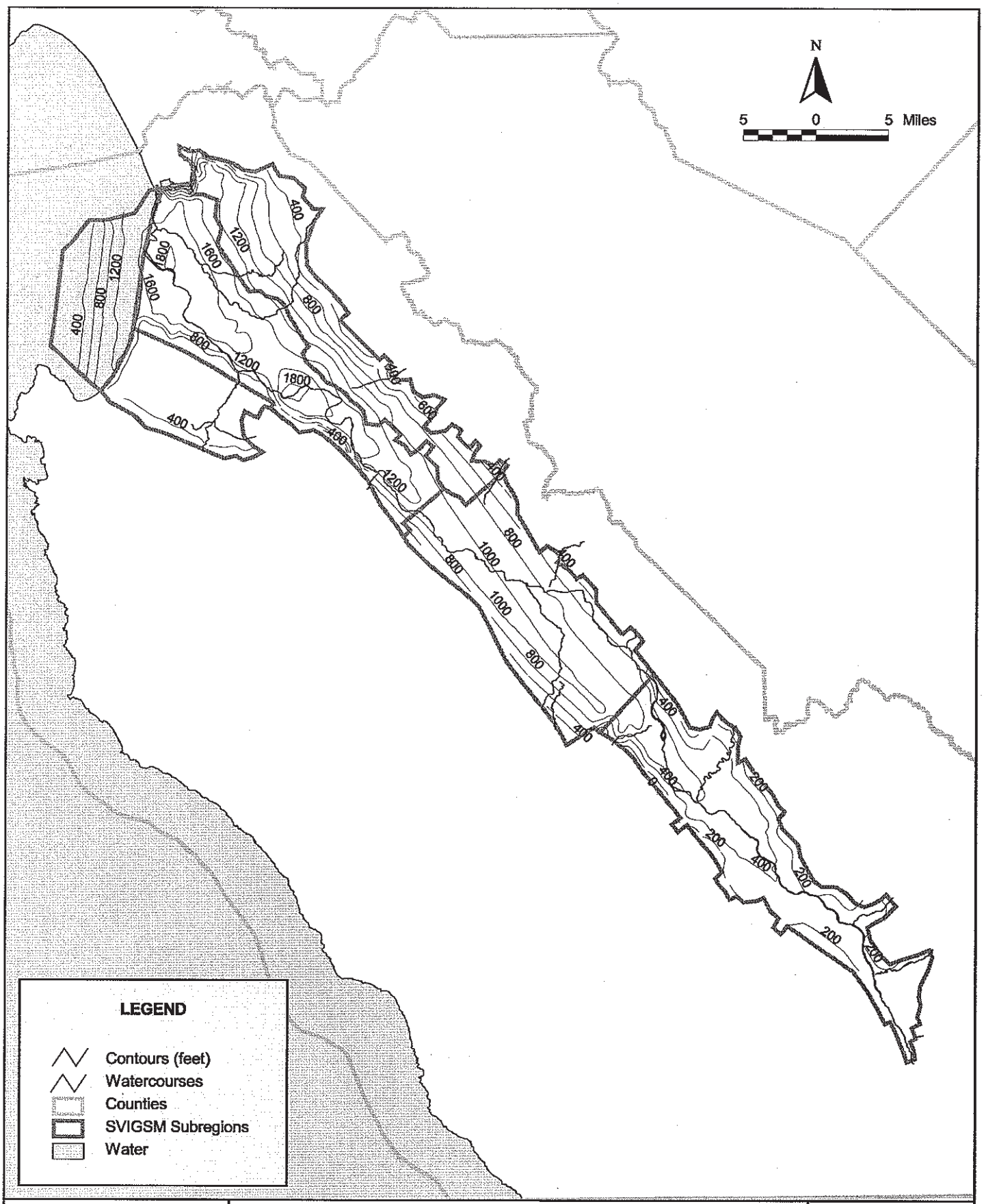
DEEP AQUIFER INVESTIGATIVE STUDY

Bottom Elevation of Model Layer 4

MAY 2003

FIGURE 3.6



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Aquifer System Thicknesses for Original Model

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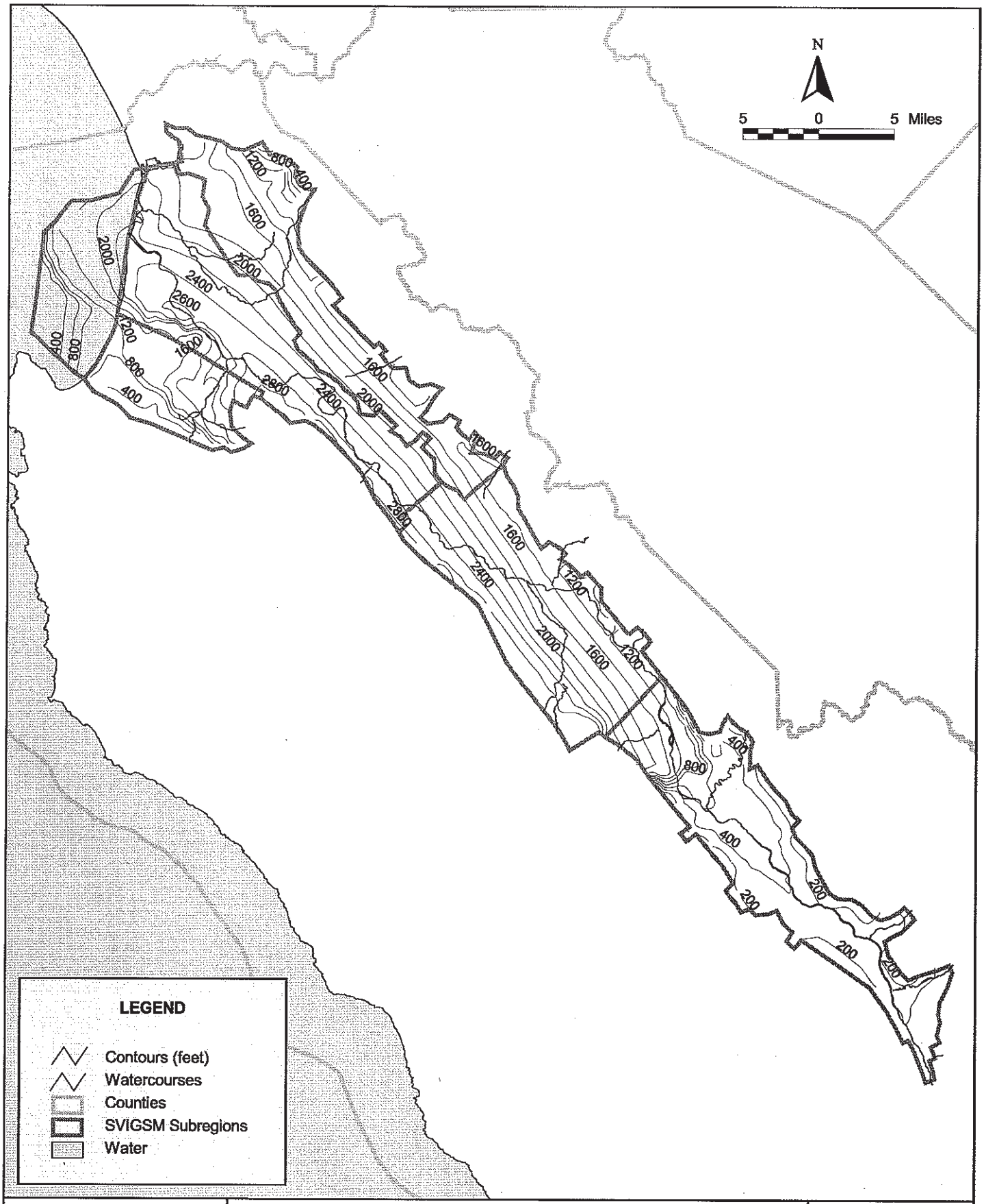
FIGURE 3.7



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Aquifer System Thicknesses for Revised Model

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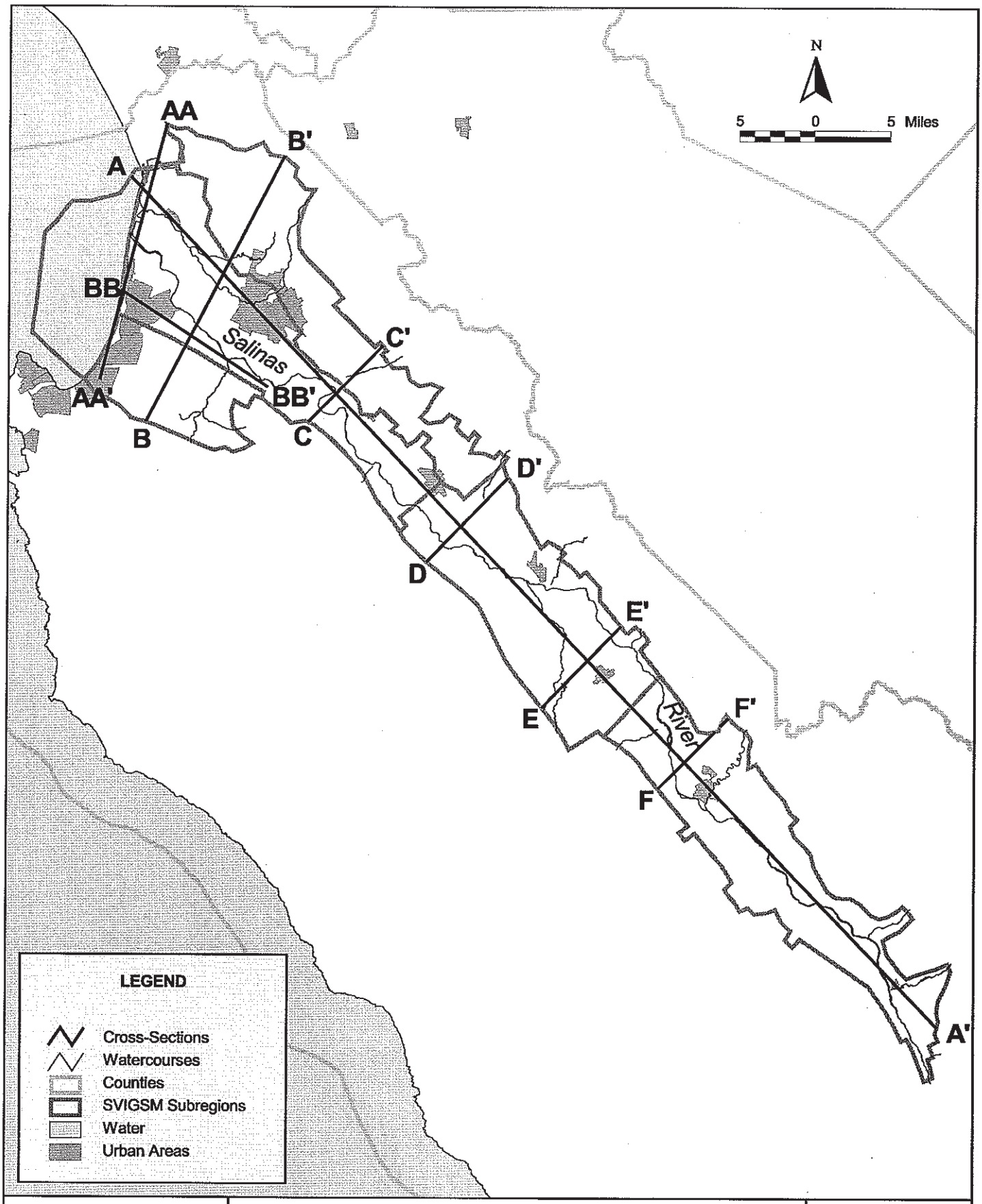
FIGURE 3.8



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SVIGSM Geologic Cross-Section Location Map

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FIGURE 3.9

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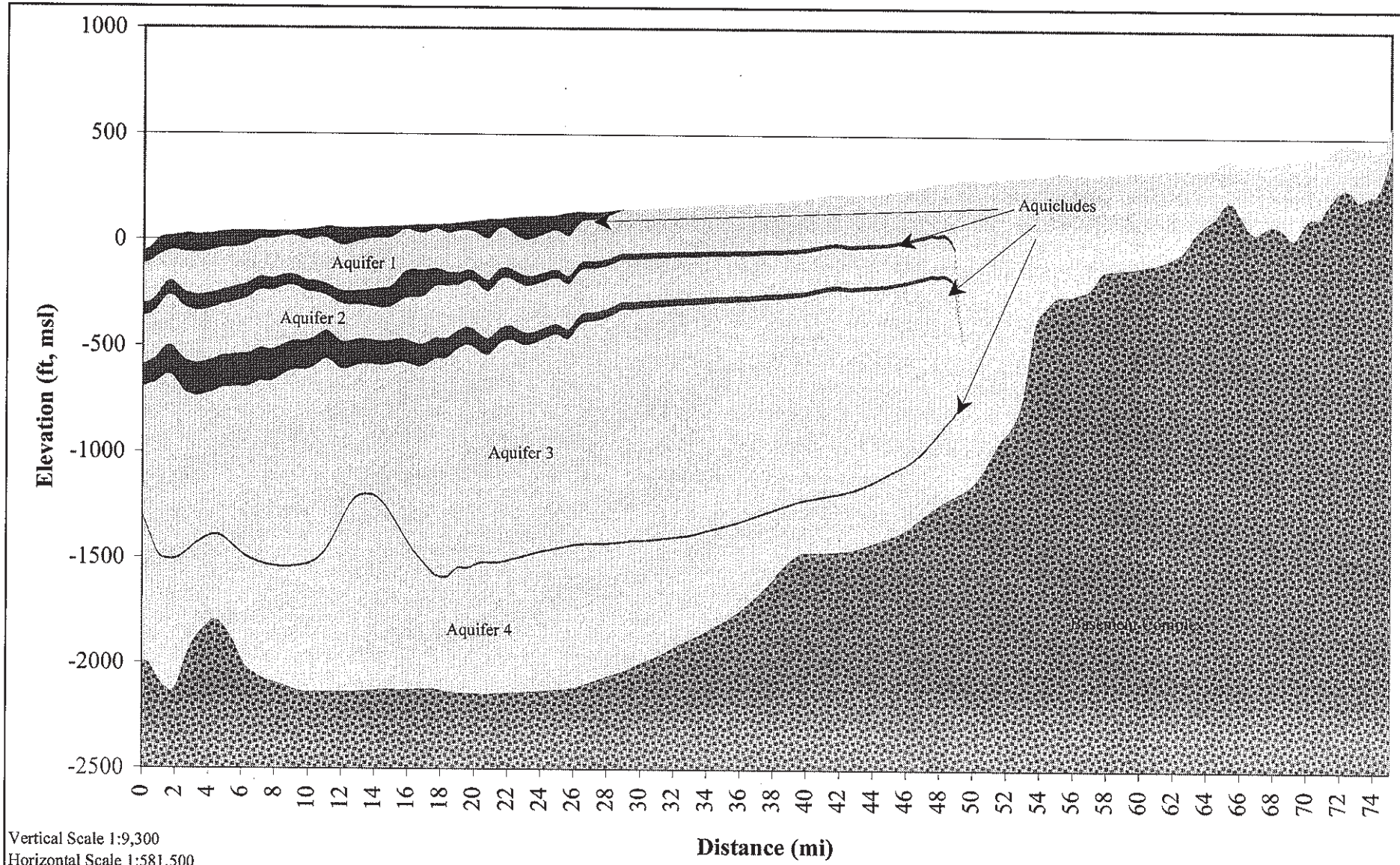
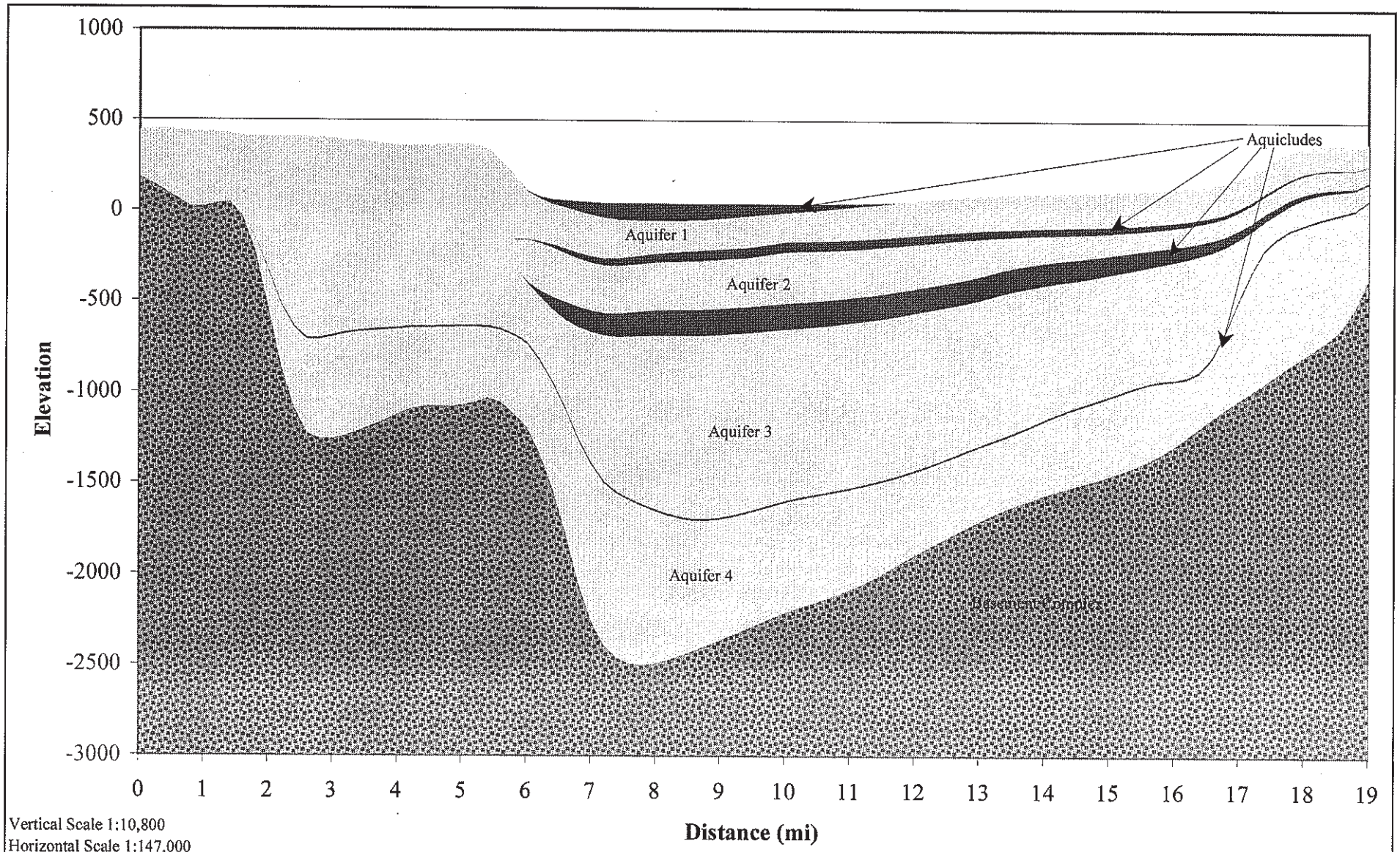


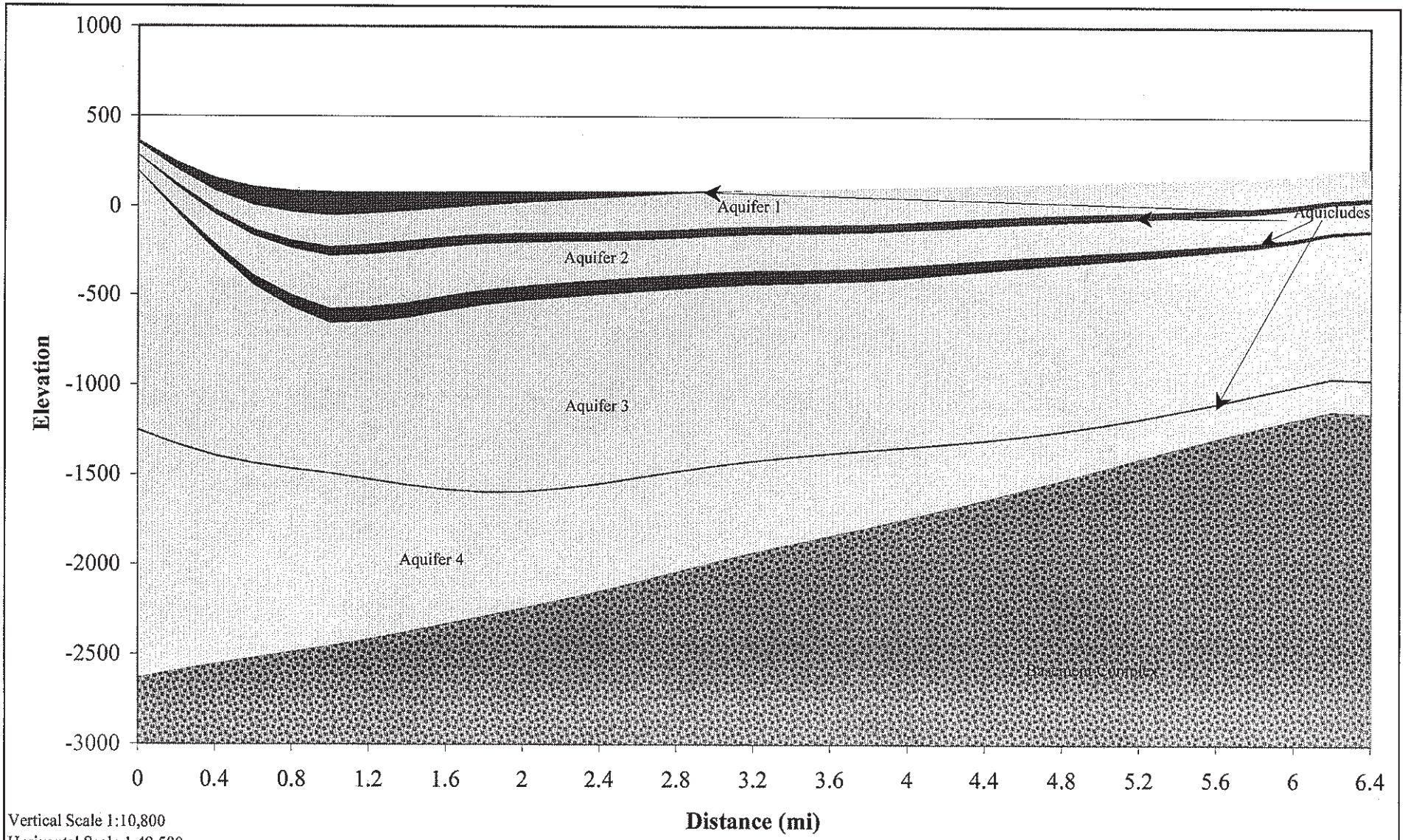
Vertical Scale 1:9,300
Horizontal Scale 1:581,500

ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section A-A'**	MAY 2003 FIGURE 3.10a



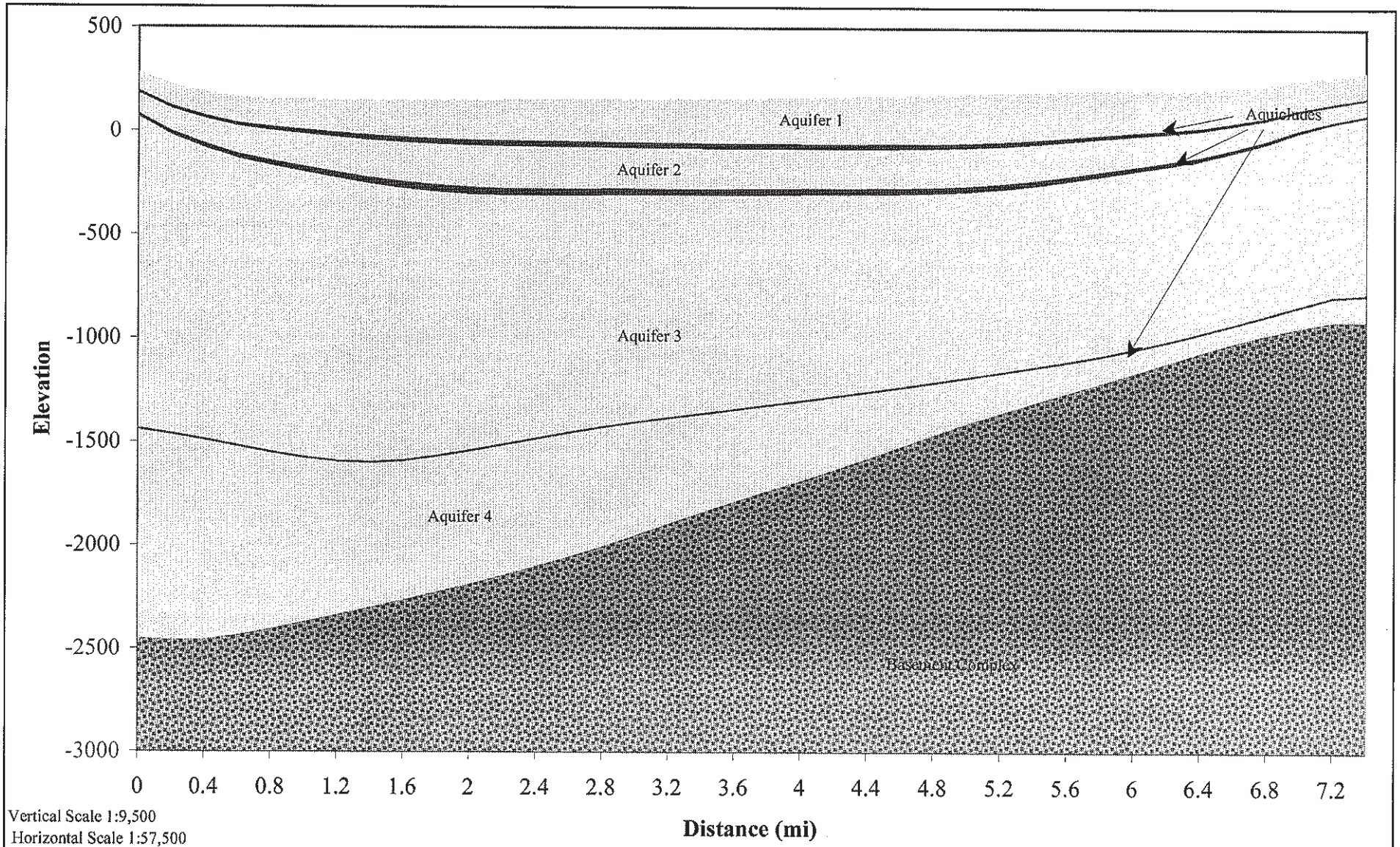
Vertical Scale 1:10,800
Horizontal Scale 1:147,000

@RIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section B-B'**	MAY 2003 FIGURE 3.10b



Vertical Scale 1:10,800
Horizontal Scale 1:49,500

ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section C-C'**	MAY 2003 FIGURE 3.10c



Vertical Scale 1:9,500
Horizontal Scale 1:57,500

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DEEP AQUIFER INVESTIGATIVE STUDY

Geologic Cross-Section D-D'

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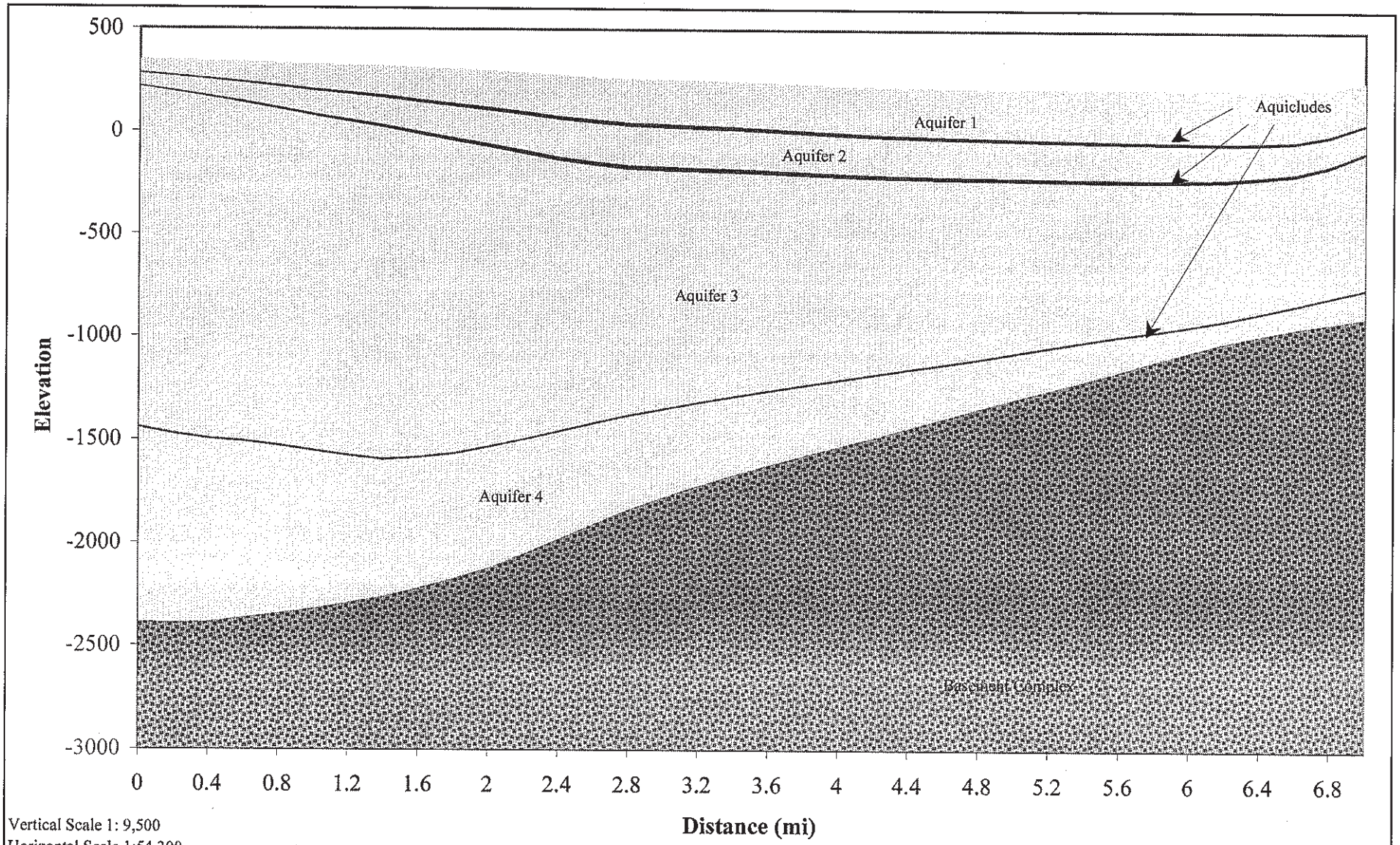
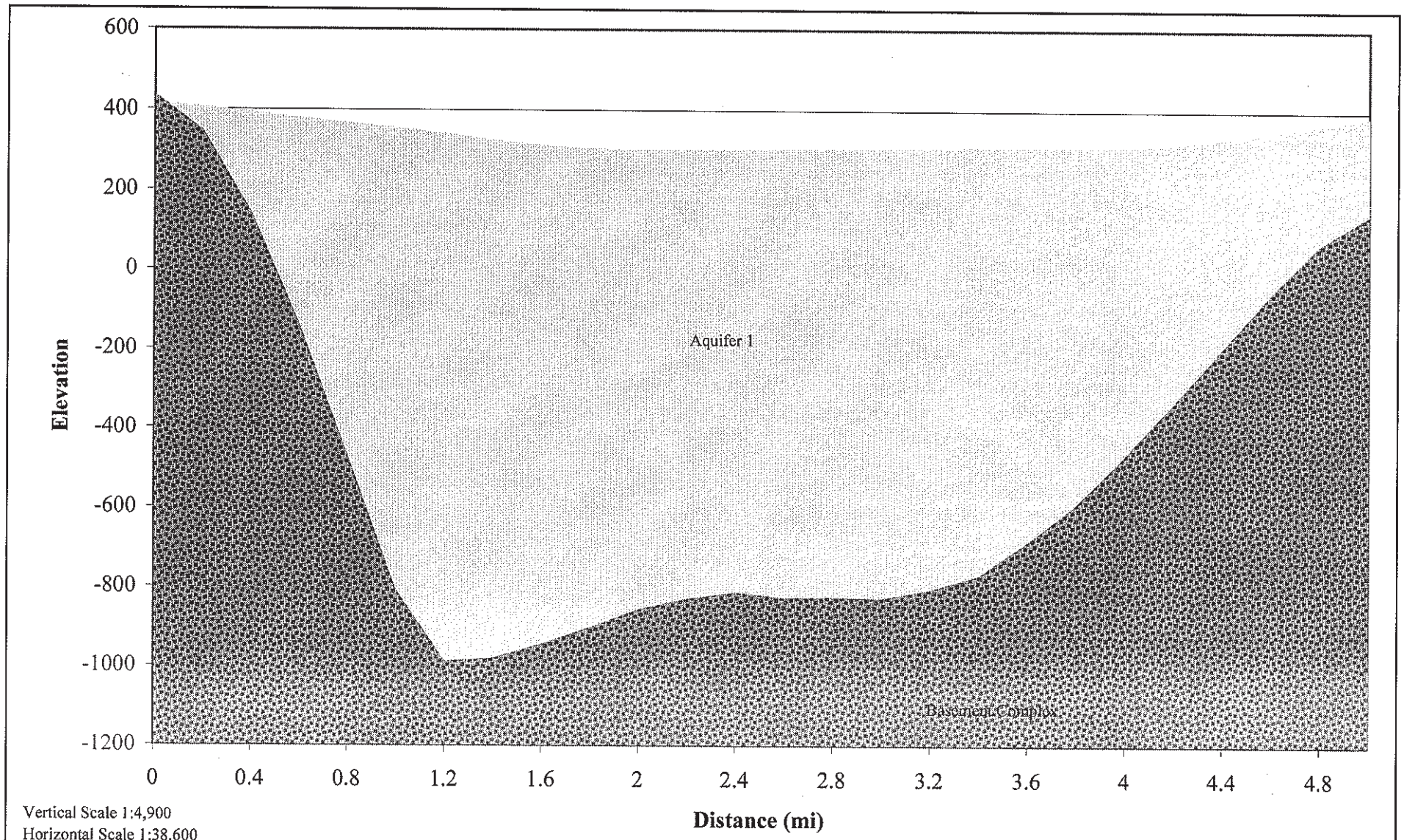
FIGURE 3.10d



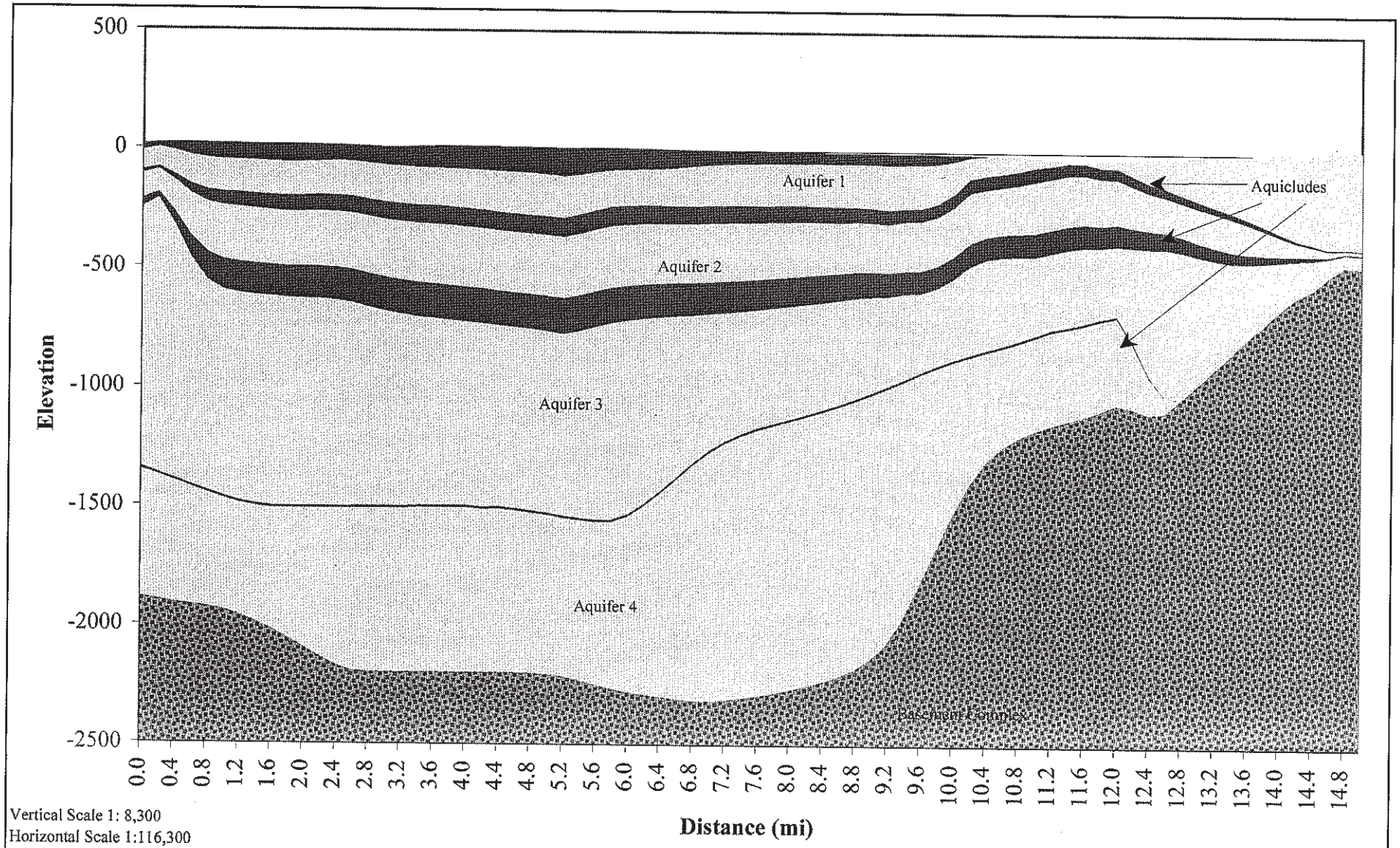
Vertical Scale 1: 9,500
Horizontal Scale 1:54,300

ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section E-E'**	MAY 2003 FIGURE 3.10e



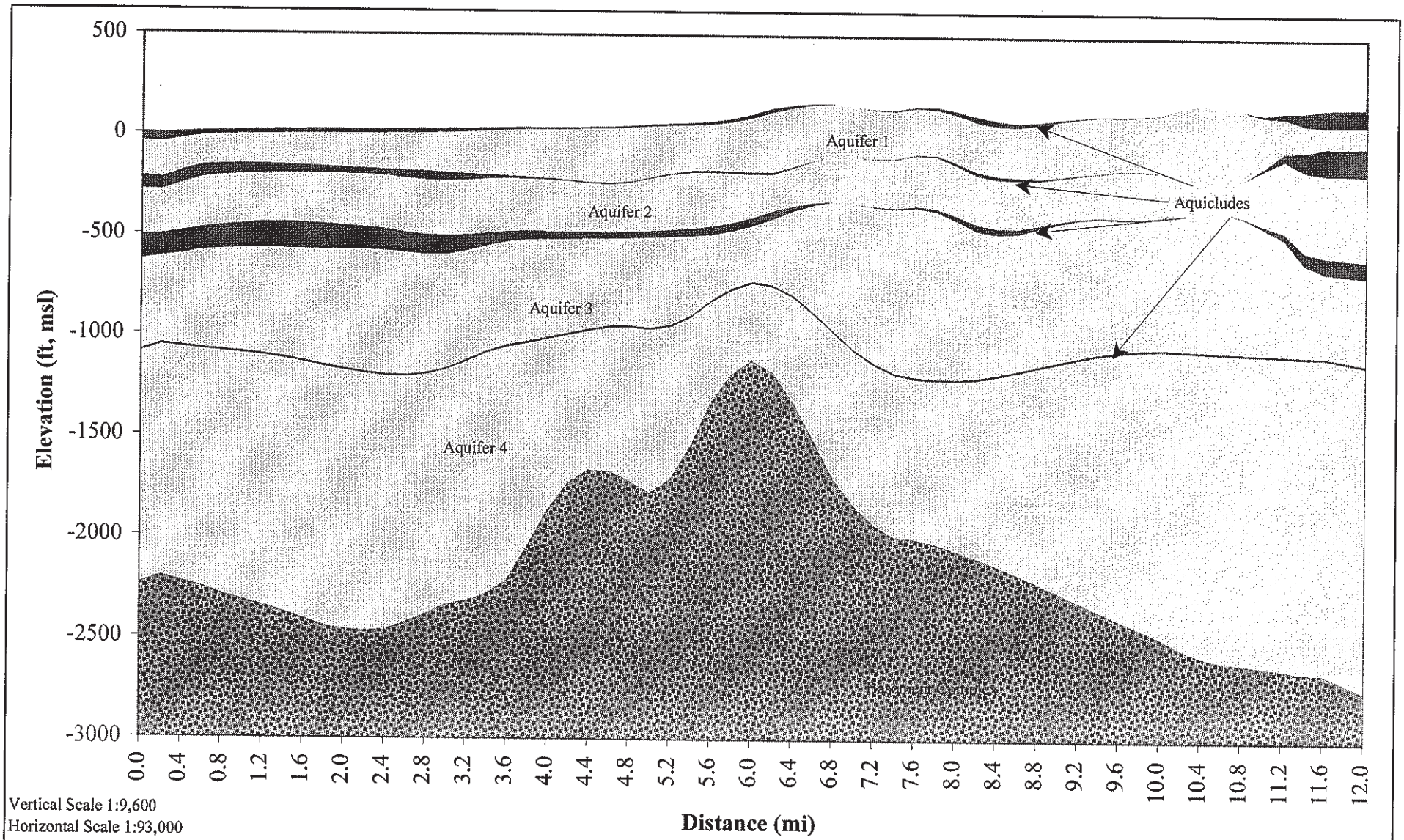
Vertical Scale 1:4,900
Horizontal Scale 1:38,600

ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section F-F'**	MAY 2003 FIGURE 3.10f



Vertical Scale 1: 8,300
Horizontal Scale 1:116,300

ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section AA-AA'**	MAY 2003 FIGURE 3.10g



Vertical Scale 1:9,600
Horizontal Scale 1:93,000

ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Geologic Cross-Section BB-BB'**	MAY 2003 FIGURE 3.10h

Based on Figures 3.4 and 3.5, the lowest elevation of the deep aquifers and upper deep aquifer is approximately 1,600 feet below mean sea level (msl). It can be concluded that the two aquifers have a similar lowest elevation. The shape of the aquifers has changed substantially, though. The deep aquifers originally pinched out at the sides of the valley. In comparison, the upper deep aquifer does not pinch out and has a bottom elevation of over 1,500 feet msl along the western boundary of the SVIGSM. In addition, the location and degree of outcrops of the upper and lower deep aquifer in the Monterey Bay is now different enough that the rate of simulated subsurface flow across the coastline in the deep aquifers is also now different. This change in the outcrop condition and its associated hydraulic effects in the deep aquifers also affects the hydraulic conditions in the 400-foot and 180-foot aquifers along the coastline, such that the simulated subsurface flow rates are expected to be different in these aquifers, because the aquifer system geometry, corresponding volume, and aquifer parameters have substantially changed. From Figure 3.7, the lower deep aquifer has a similar shape to the upper deep aquifer and their lowest bottom elevation is in excess of 2,400 feet below msl. Figures 3.8 and 3.9 show that the aquifer system thickness has increased by over 2,400 feet in some areas. However, due to low storage coefficients in the lower deep aquifer, the added thickness in the lower deep aquifer does not necessarily equate to larger storage volume and higher yield from this formation.

Reliz Fault Modifications

At the time of developing the original SVIGSM, the King City (Reliz) fault was understood to impede groundwater flow between the Pressure subarea and Fort Ord. As such, a row of finite elements between the Pressure subarea and Fort Ord were assigned a low hydraulic conductivity. Review of hydrogeologic data and groundwater levels across the fault, conducted as part of this study, suggests that although the Reliz fault has deformed units as young as the Paso Robles Formation, the fault itself does not appear to affect groundwater flow. Based on this work, the fault conditions (low hydraulic conductivities, approximately 1.1×10^{-2} ft/day) were removed from the SVIGSM database, and hydraulic conductivities comparable to ones in the neighboring elements were assigned to the fault elements (ranging from 5 to 30 ft/day).

Coastal Boundary Conditions

The SVIGSM finite element network includes the portion of the Monterey that overlies the Salinas basin aquifer systems. The grid nodes in this part of the model network are assigned as general head boundary condition such that proper hydraulic gradient at the coastline is simulated. This hydraulic gradient was adjusted during model calibration so that the simulated groundwater heads at the coastal wells in the 180-foot, 400-foot, and the deep aquifer wells (in the Castroville area) are reasonably close to the observed groundwater heads in these wells.

This general head boundary condition accounts for changes in hydraulic head due to seawater density relative to fresh water. As a result of changes in the stratigraphy of deep aquifers in this study, the sensitivity of simulated groundwater levels to this boundary condition was evaluated, and as a result no changes to this boundary condition was necessary.

SVIGSM Recalibration

Due to changes in the stratigraphic conditions of the deep aquifers, the following is a list of parameters that were changed as part of the recalibration effort.

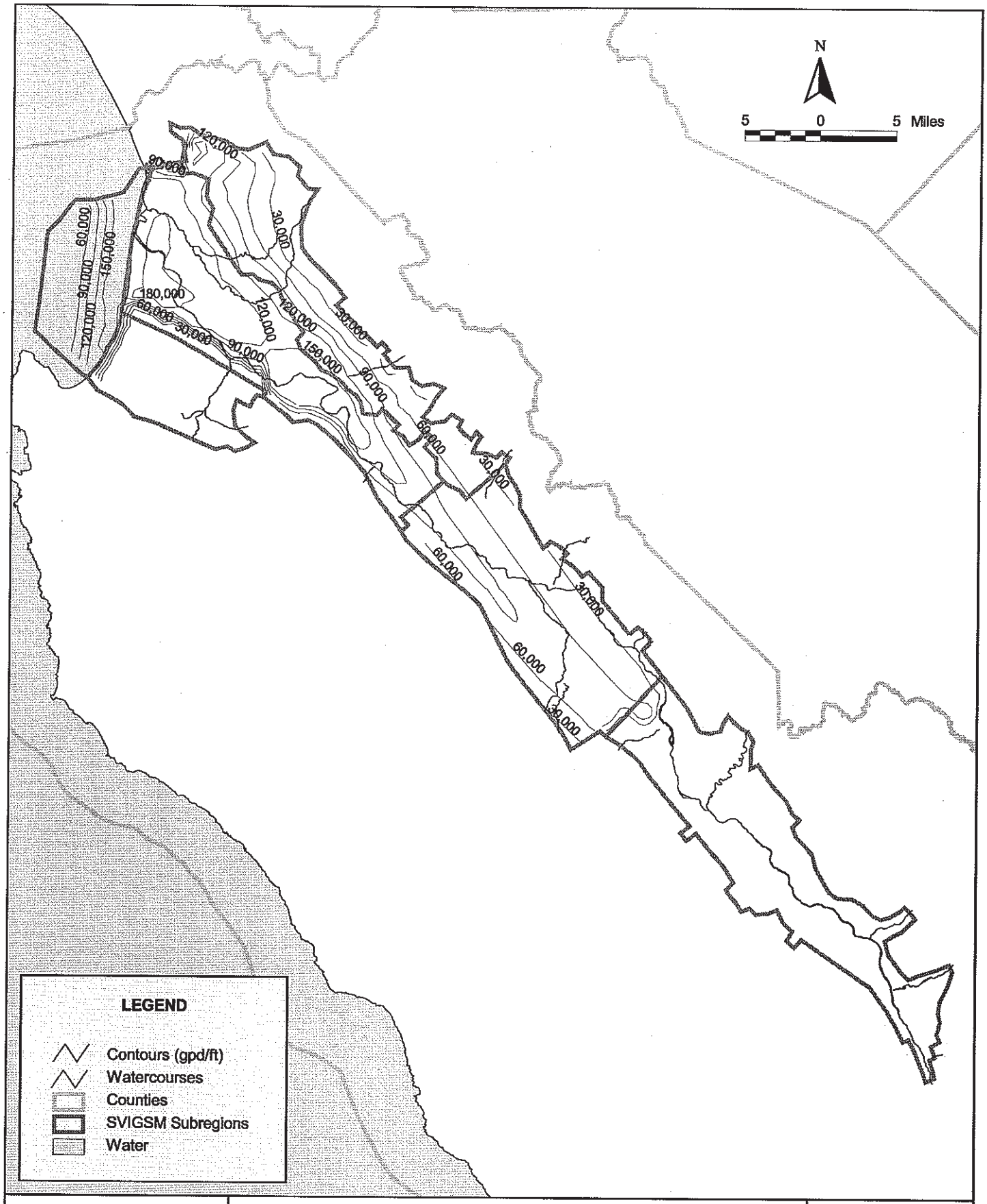
1. Horizontal hydraulic conductivity,
2. Storativity of the deep aquifers,
3. Vertical hydraulic conductivity of the aquitard above upper deep aquifer, and between the upper and lower deep aquifers; and
4. Streambed Parameters

Following is a brief discussion of the modifications:

Horizontal Hydraulic Conductivity

The model hydraulic conductivity parameters are adjusted to bring the model into calibration. Because the transmissivity values for the deep aquifers in the original model was based on model calibration with observed groundwater heads, the goal of this recalibration effort was to preserve the range of original transmissivity values. In addition, Table 2.2 provides additional set of data for model recalibration. Therefore, the changes to the model hydraulic conductivity values were first achieved by replacing the original parameters with equivalent ones, so that the total transmissivity of each model layer remained about the same as in the three-layer model. It was assumed that the transmissivity of model layer 3 (upper deep aquifer) and layer 4 (lower deep aquifer) are similar. Figure 3.11 shows the transmissivity for Layer 3 in the original model. Figures 3.12 and 3.13 show the hydraulic conductivity for Layer 3 in the original and revised models, respectively. Figure 3.14 shows the hydraulic conductivity for Layer 4 in the revised model. Subsequently, additional localized refinements were made to incorporate information from Table 2.2 into the model.

Based on the contour maps of saturated thickness from Thorup, and as discussed in Section 2 of this report, the total saturated thickness of the aquifer system in the Upper Valley area is more in the revised model than in the original model. As such, an equivalent hydraulic conductivity for the one-layer aquifer system in the Upper Valley was also developed based on the same



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Transmissivities in gpd/ft for Original Model Layer 3

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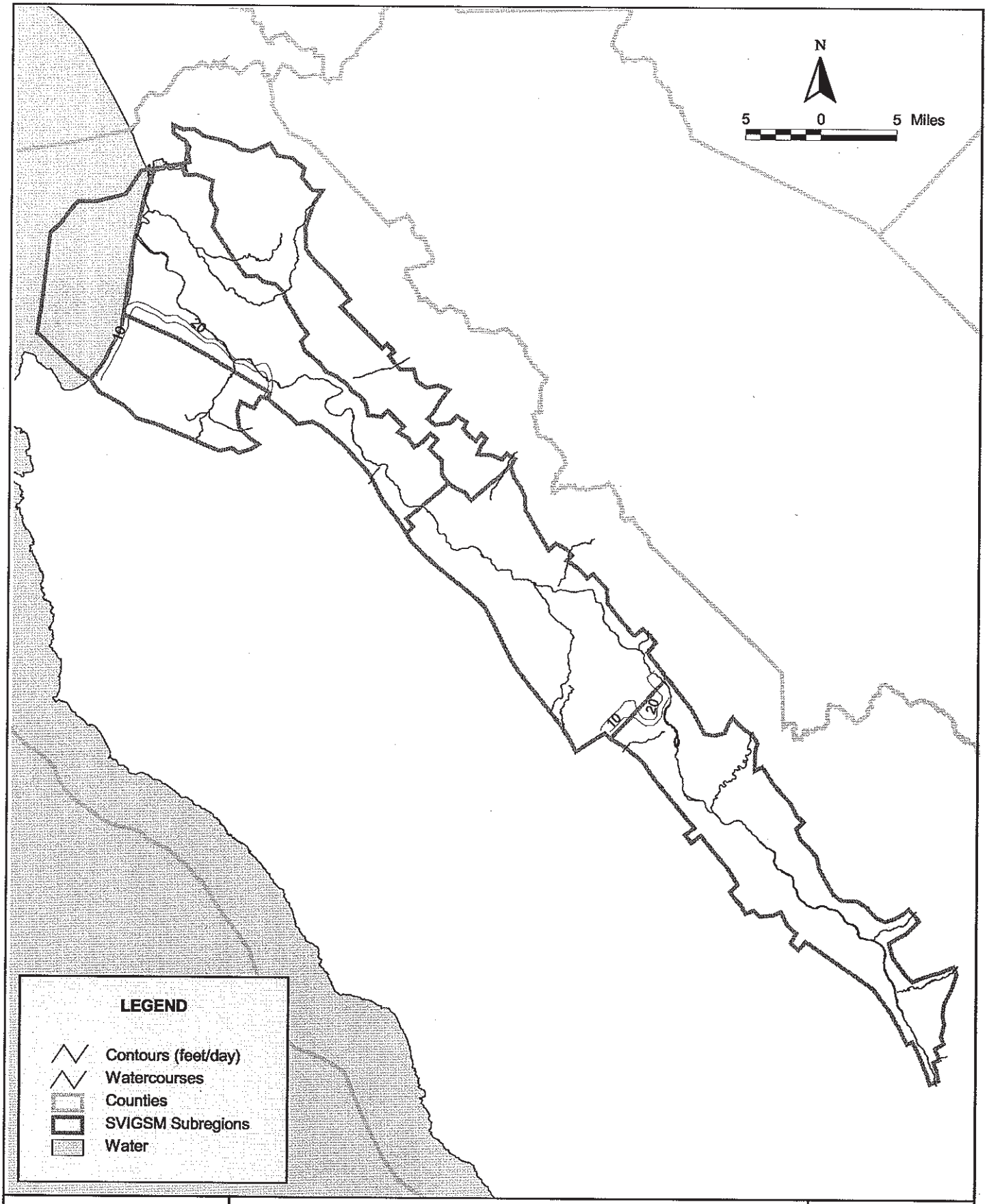
FIGURE 3.11



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DEEP AQUIFER INVESTIGATIVE STUDY

Hydraulic Conductivities for Original Model Layer 3

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FIGURE 3.12

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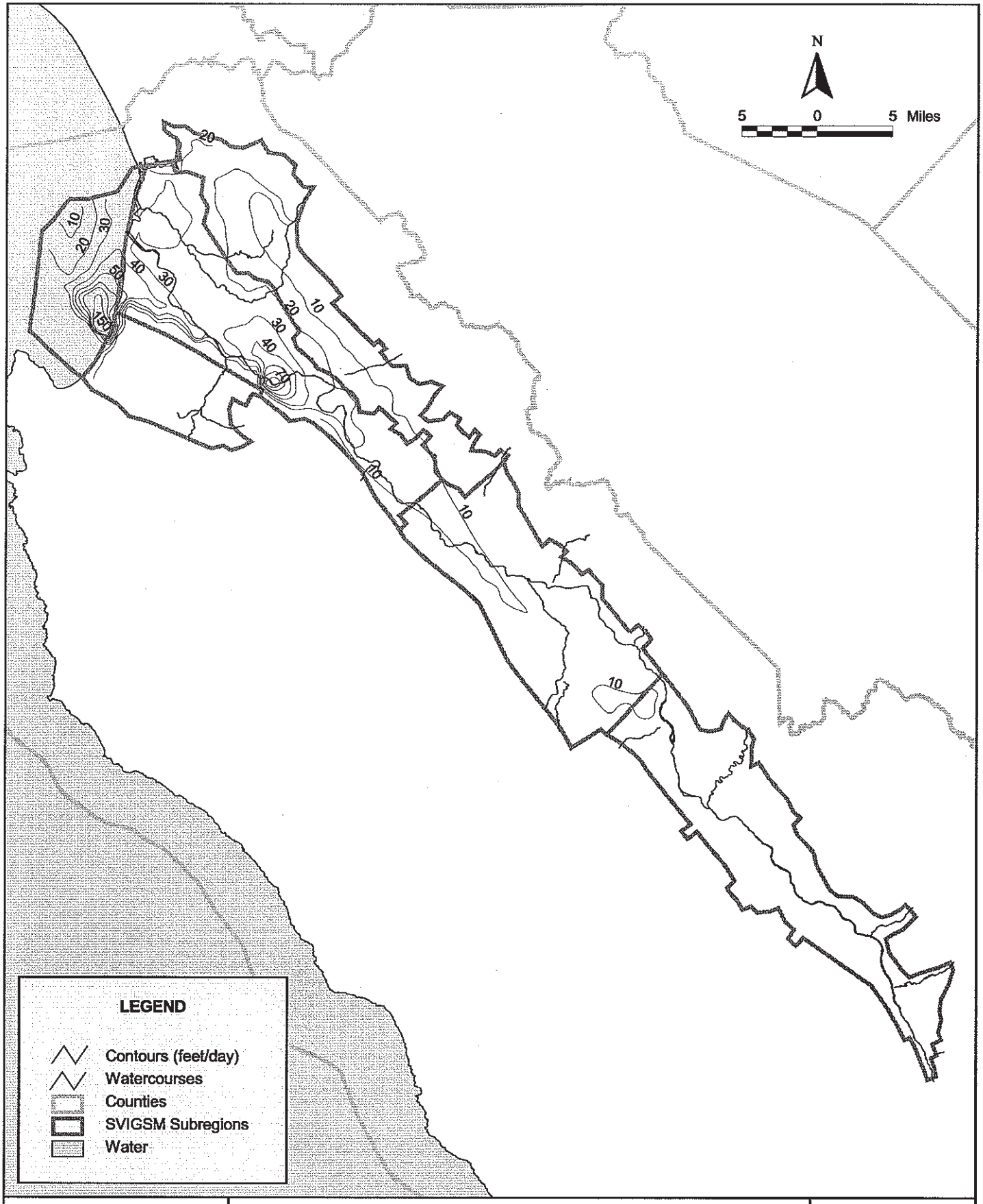

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DEEP AQUIFER INVESTIGATIVE STUDY

Hydraulic Conductivities for Revised Model Layer 3

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FIGURE 3.13

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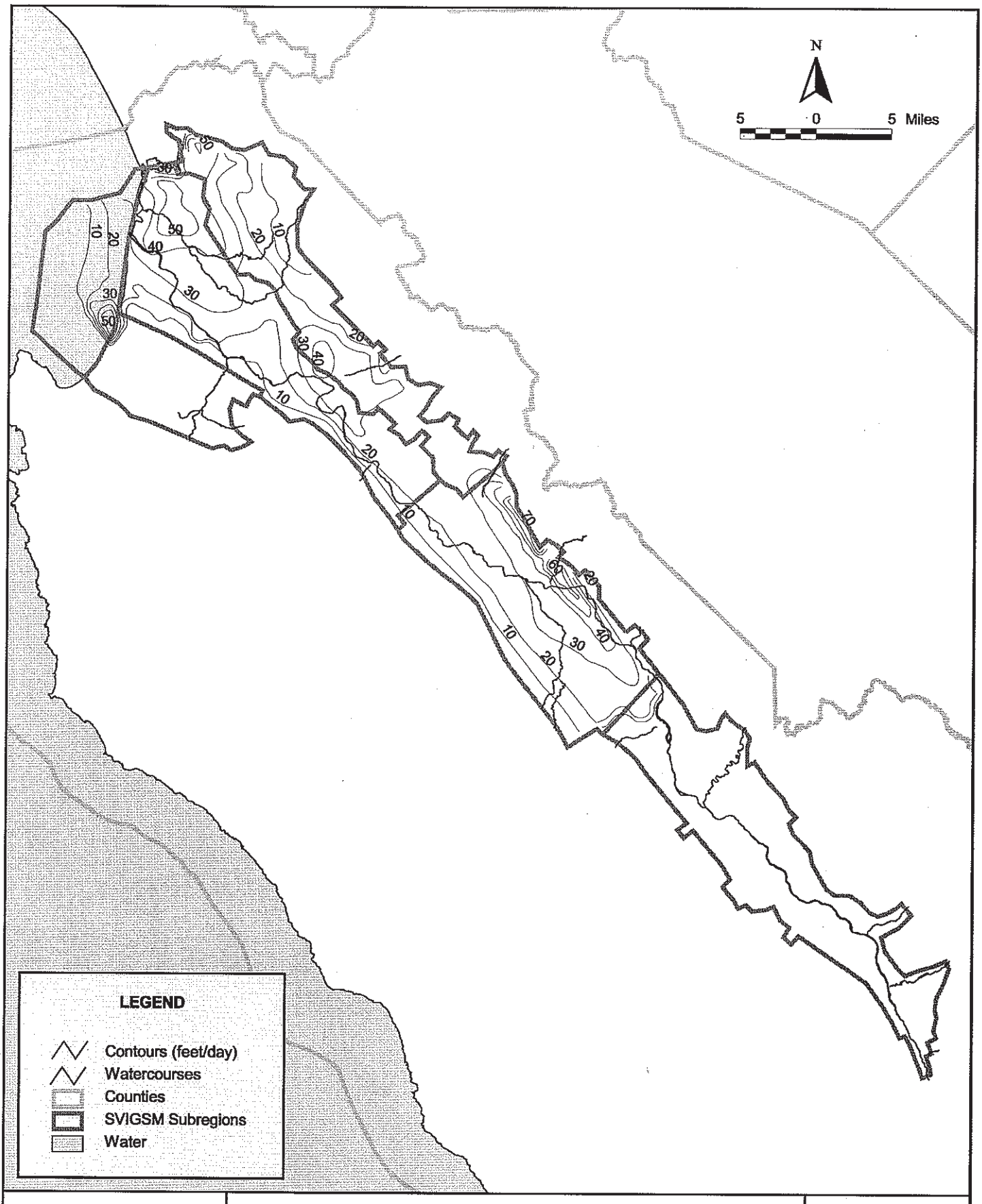

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MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Hydraulic Conductivities for Revised Model Layer 4

MAY 2003

FIGURE 3.14

method as used in the deep aquifers system. Figures 3.15 and 3.16 show the hydraulic conductivities of the original model and the revised model layer 1.

Storativity of Deep Aquifers

The changes in the thickness of the deep aquifers from the original model require modifications to the storativity parameters so that seasonal responses of the simulated groundwater levels are similar to those in the observed groundwater level data. The storage coefficient in the 3-Layer SVIGSM was $5x10^{-5}$. The storage coefficient of the deep aquifers was reduced by approximately one order of magnitude, such that the resulting Storage coefficient ranges from $1x10^{-6}$ to $5x10^{-6}$. These changes were focused on the northwestern area of the model.

Vertical Hydraulic Conductivity of Aquitards

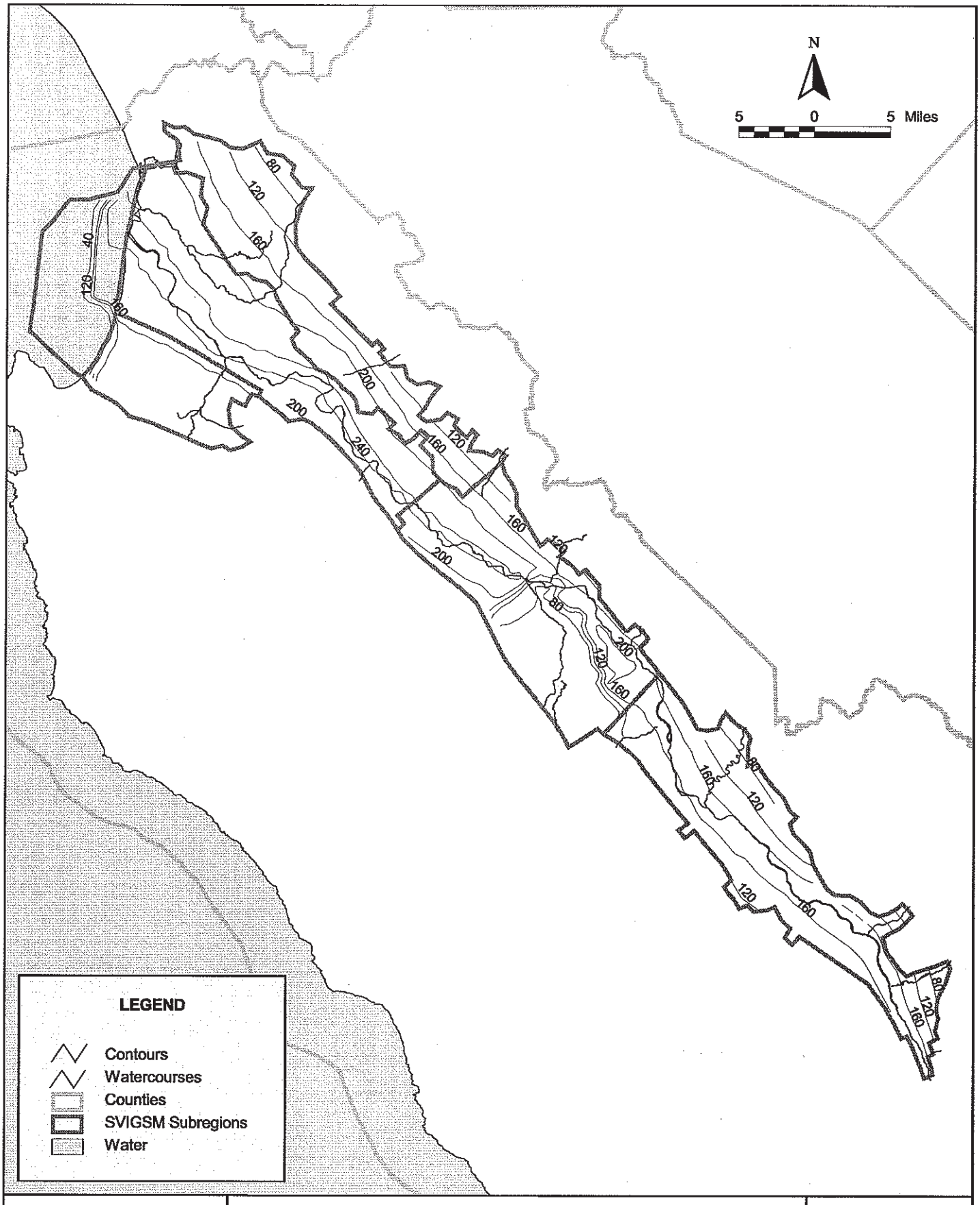
As a result of changes to the thickness of the upper deep aquifer, the hydraulic connection between the upper deep and the 400-foot aquifers need to be revised. The vertical hydraulic conductivity for the aquitard above the upper deep aquifer is modified to ensure that the model leakage between the 400-foot and the upper deep aquifer remains approximately the same as the original model. The vertical hydraulic conductivity in the MCWD area is 3.6×10^{-3} ft/day and the aquitard thickness ranges from about 50 to 150 feet in and around MCWD.

As discussed in Section 2 of this report, the observed groundwater heads in wells 10, 11, and 12 indicate that there may be a separation in hydraulic connection between the upper and lower deep aquifers. In order to simulate this condition, as well as calibrate the model to the observed groundwater heads at these wells, a 10-Ft aquitard is assumed between the upper and lower deep aquifers. This aquitard thickness is merely to add calibration control for modeling purposes, and is not based on any hydrogeologic information. The vertical hydraulic conductivity between the upper and lower deep aquifers, in the MCWD area, is $3.6x10^{-4}$ ft/day

Streambed Parameters

Average annual streamflow depletions in the previous version of the SVIGSM were compared with the updated version of SVIGSM. Due to changes in hydraulic conductivity of model layer 1, the streamflow depletions of the two model versions did not match. Hydraulic conductivity values of the streambed were modified so that a better match of simulation streamflow depletion values was achieved. The following represents the changes made to the streambed hydraulic conductivities from the original model:

1. Salinas River conductivities were increased in the Upper Valley subarea;



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Hydraulic Conductivities for Original Model Layer 1

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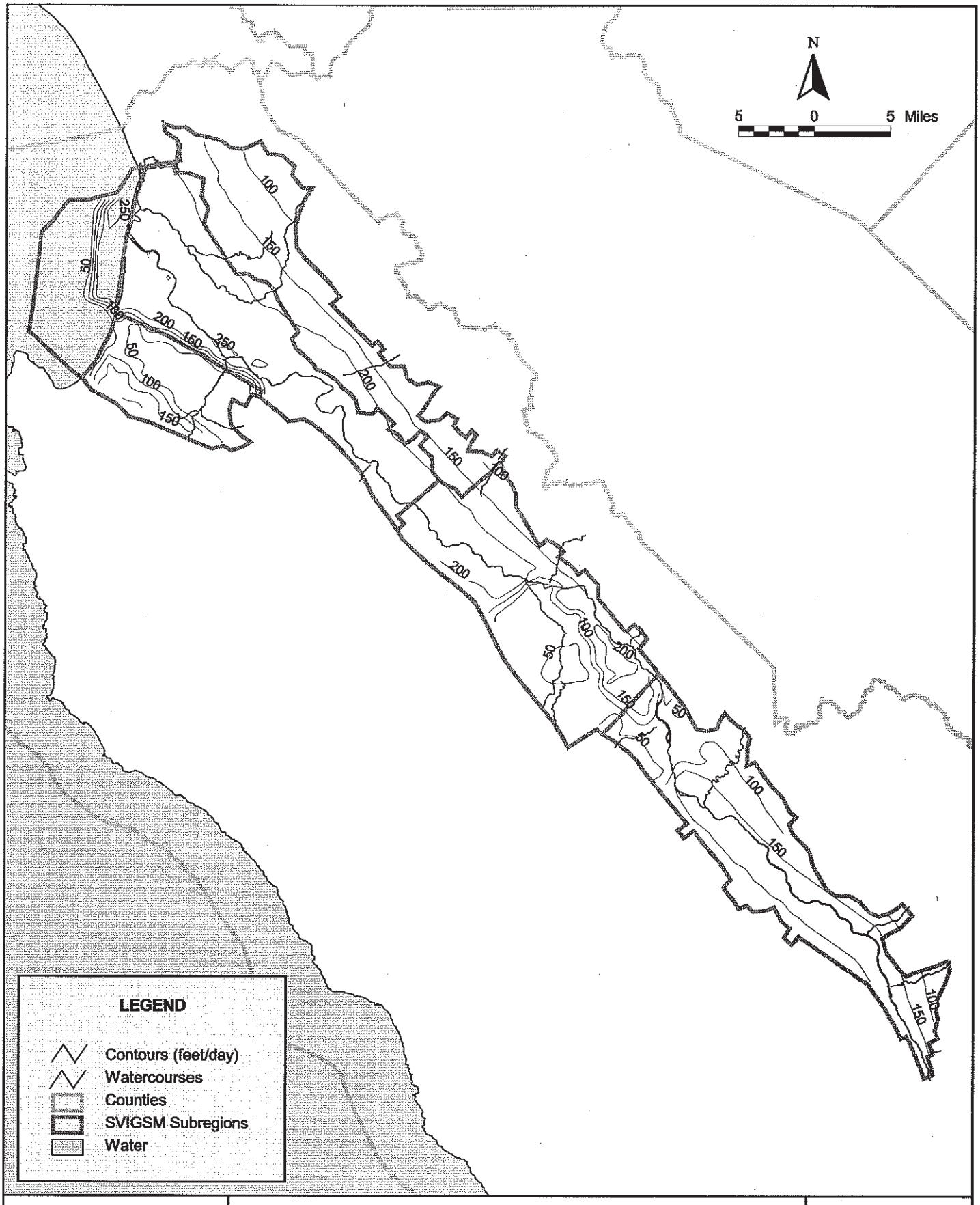
FIGURE 3.15



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Hydraulic Conductivities for Revised Model Layer 1

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FIGURE 3.16

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2. Arroyo Seco River conductivities were slightly reduced in the Forebay Subarea; and

3. Salinas River conductivities in the Pressure Subarea above El Toro Creek were increased.

As a result of the recalibration efforts, there was a better match of simulated groundwater levels with the previously simulated groundwater levels and with observed groundwater levels. Figures 3.17a through 3.17d show the distribution of residuals for each subarea over the simulation period. Figures 3.18a through 3.18e show the distribution of errors in the simulated and historic groundwater levels in the entire model area as well as in each subarea. The distributions of residual groundwater levels show the percentage or residuals within the specified ranges. Again, a higher percentage of residuals near zero and one that is more centered on zero indicate a better simulation of historical conditions. Model performances for the entire model area and each subarea are summarized below based on these statistical evaluations. A comparison of Figures 3.2a–3.2d and 3.18a–3.18e indicates that quality of model calibration in the revised version of SVIGSM is as good as or better than the original version.

Model Area. Nearly all simulated groundwater levels (approximately 91%) for the entire model area are within 20 feet of observed groundwater levels. Approximately 80% of simulated groundwater levels are within 10 feet of observed groundwater levels. These are better statistical results than what was determined in the previous version of SVIGSM.

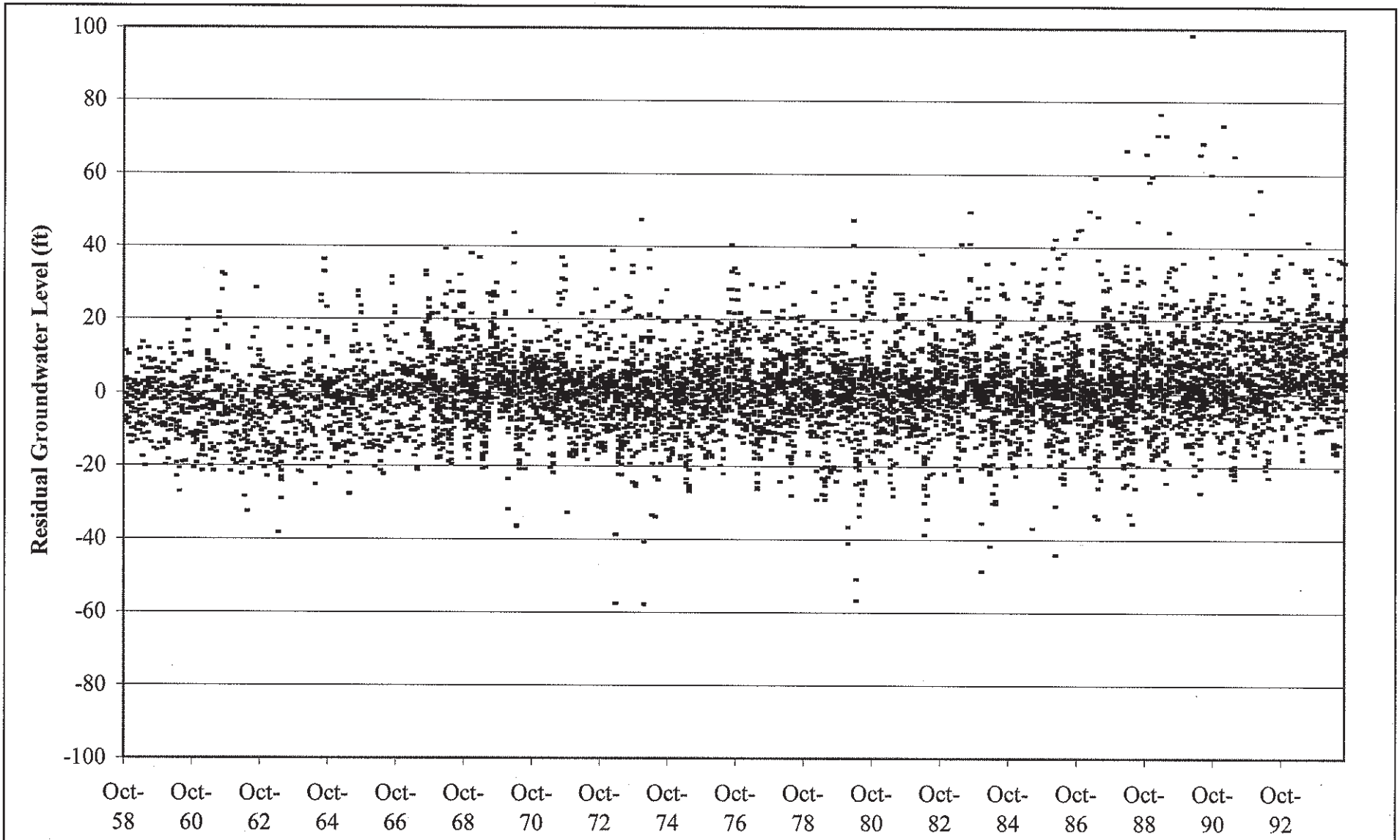
Pressure Subarea. The majority of the simulated groundwater levels (approximately 80%) lie within 10 feet of observed groundwater levels.

East Side Subarea. Distributions of the residuals show that approximately 55% of simulated groundwater levels are within 10 feet of observed groundwater levels. This is consistent with the previous SVIGSM version.

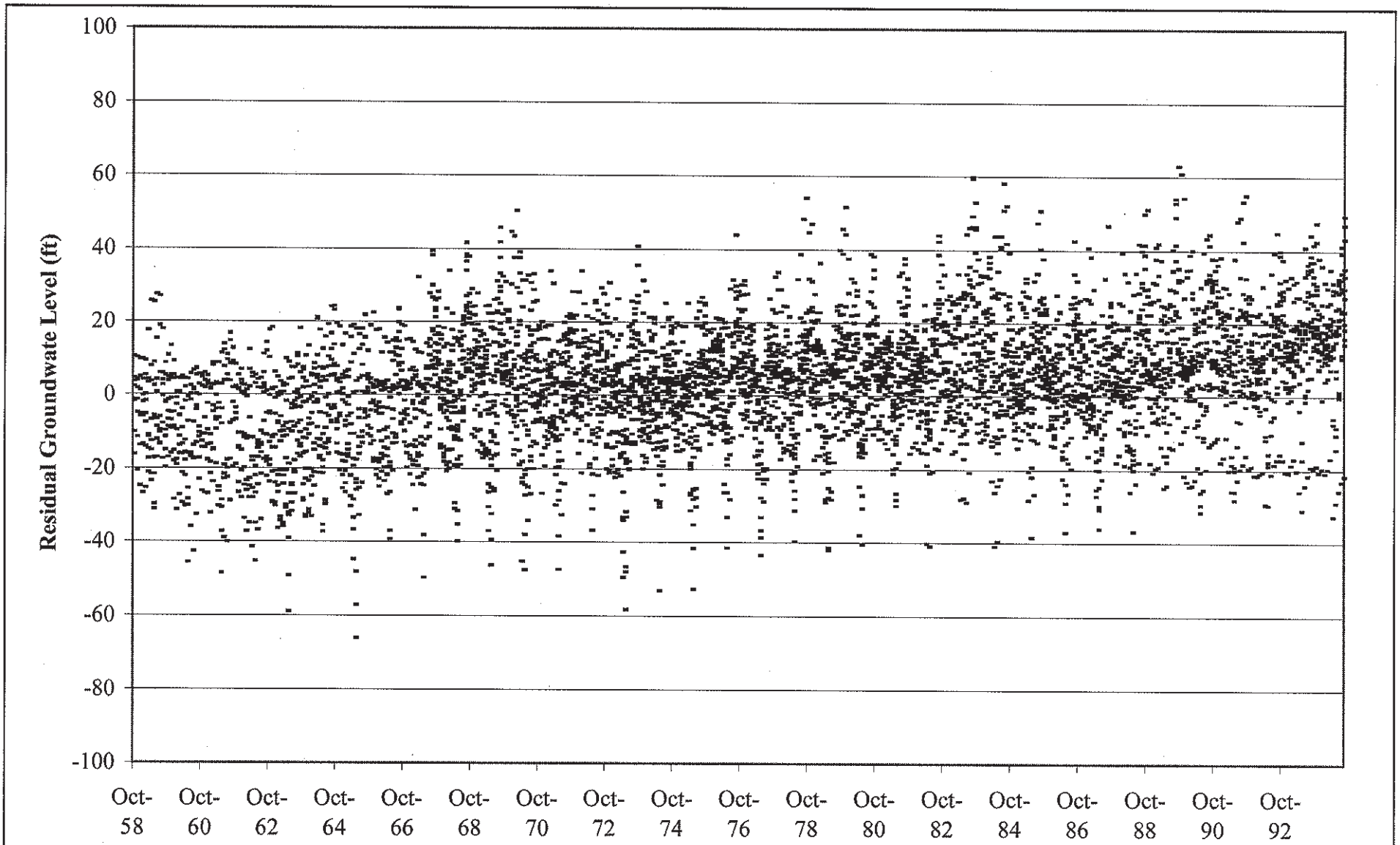
Forebay Subarea. The distribution of residuals shows good calibration between simulated and observed groundwater levels. Overall, 75% percent are within 10 feet of each other. The distributions appear to be normally shaped except for the Forebay deep aquifers that show a bias of the model in underestimating groundwater levels. These results are not as good as the statistical results from the previous SVIGSM version.

Upper Valley Subarea. Simulated groundwater levels tend to match observed groundwater levels. All simulated values are within 20 feet of observed groundwater levels.

Figure 3.2 shows the location of the calibration wells, including the MCWD production wells. Figures 3.19 through 3.21 show the hydrographs for each of the wells. These Figures indicate



ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Residual Groundwater Level between SVIGSM Version 5.0 and Historic Data in the Pressure Subarea - 4 Layer Model for Water Years 1959 through 1994**	MAY 2003 FIGURE 3.17a



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MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Residual Groundwater Level between SVIGSM Version 5.0 and Historic Data in the East Side Subarea - 4 Layer Model for Water Years 1959 through 1994

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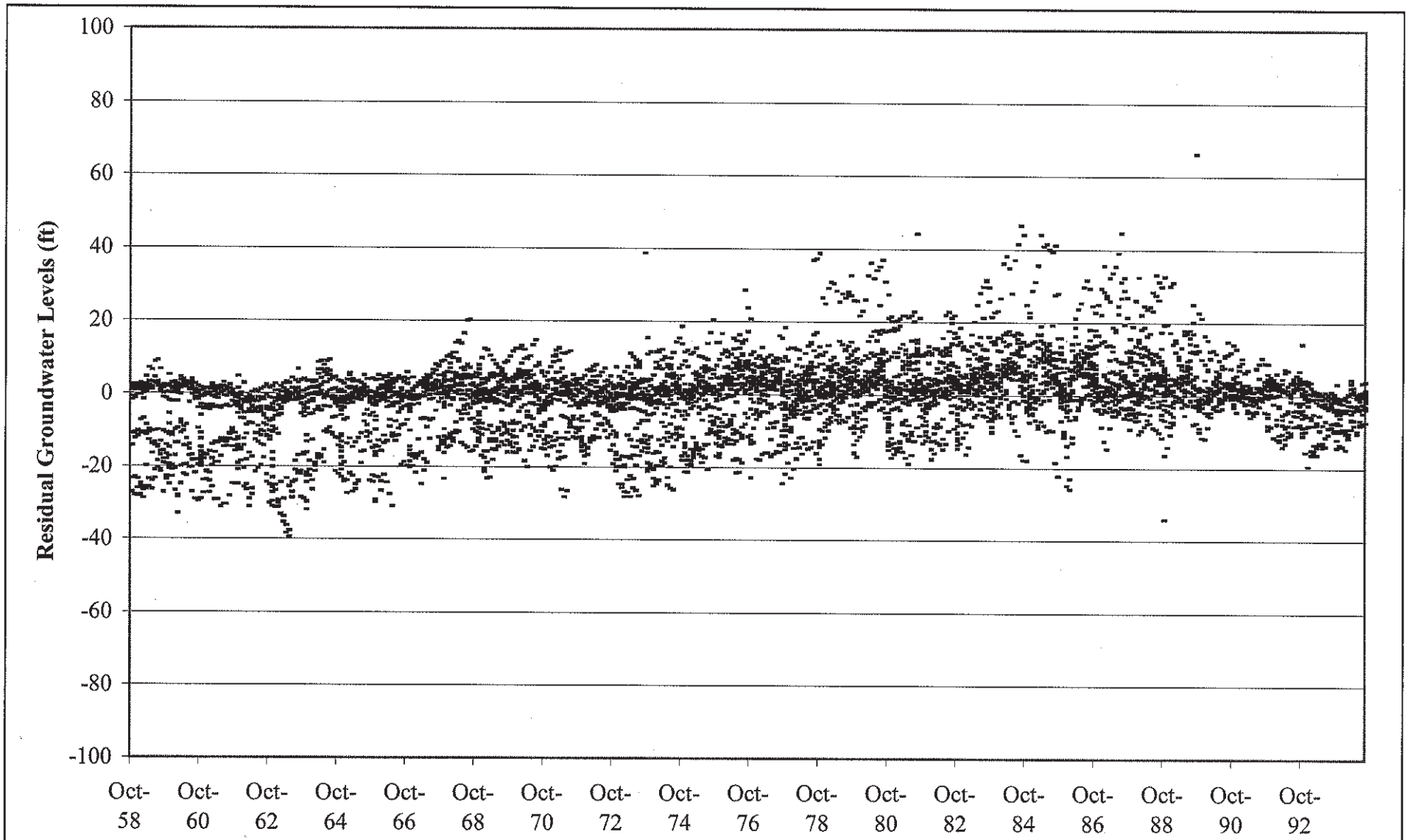
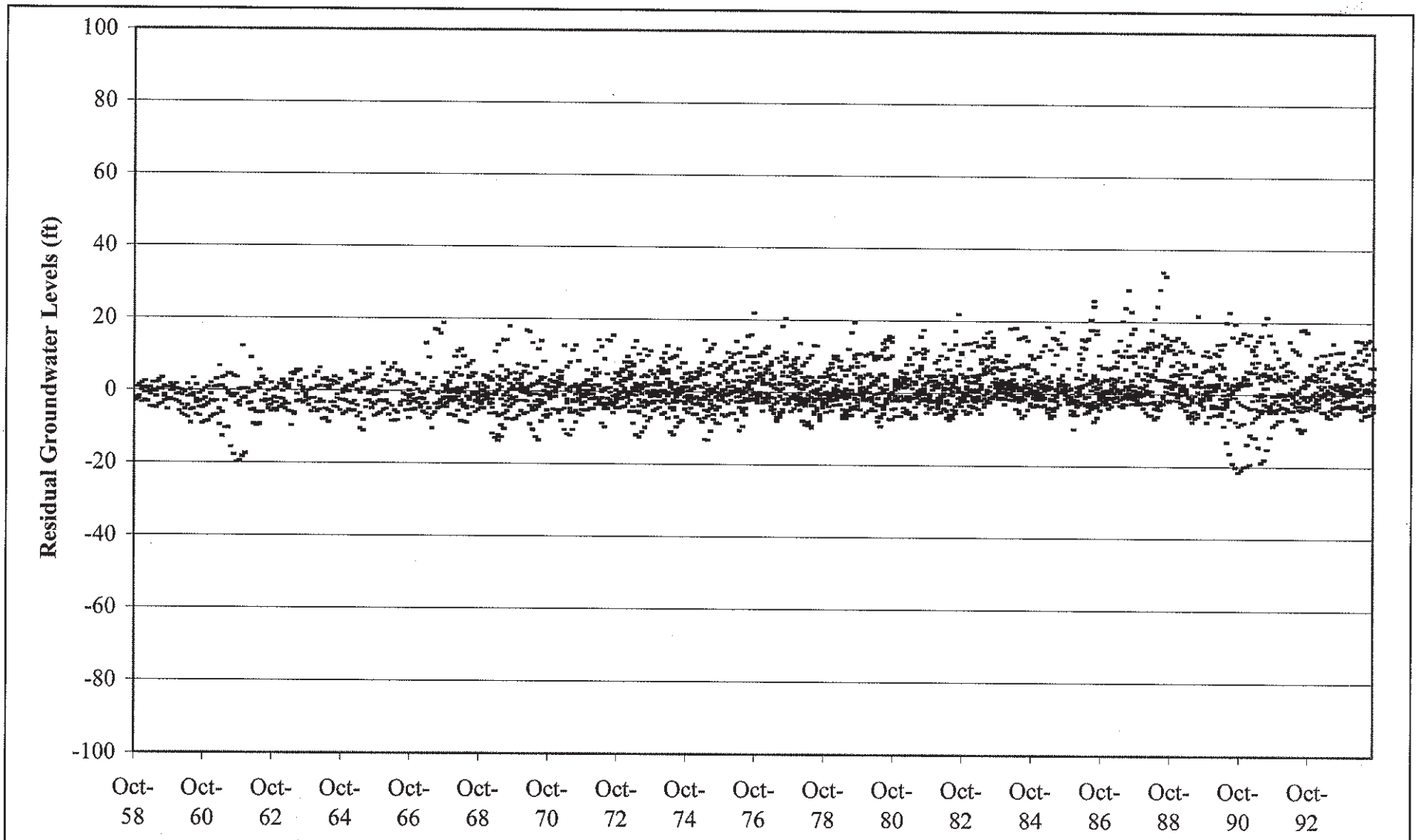
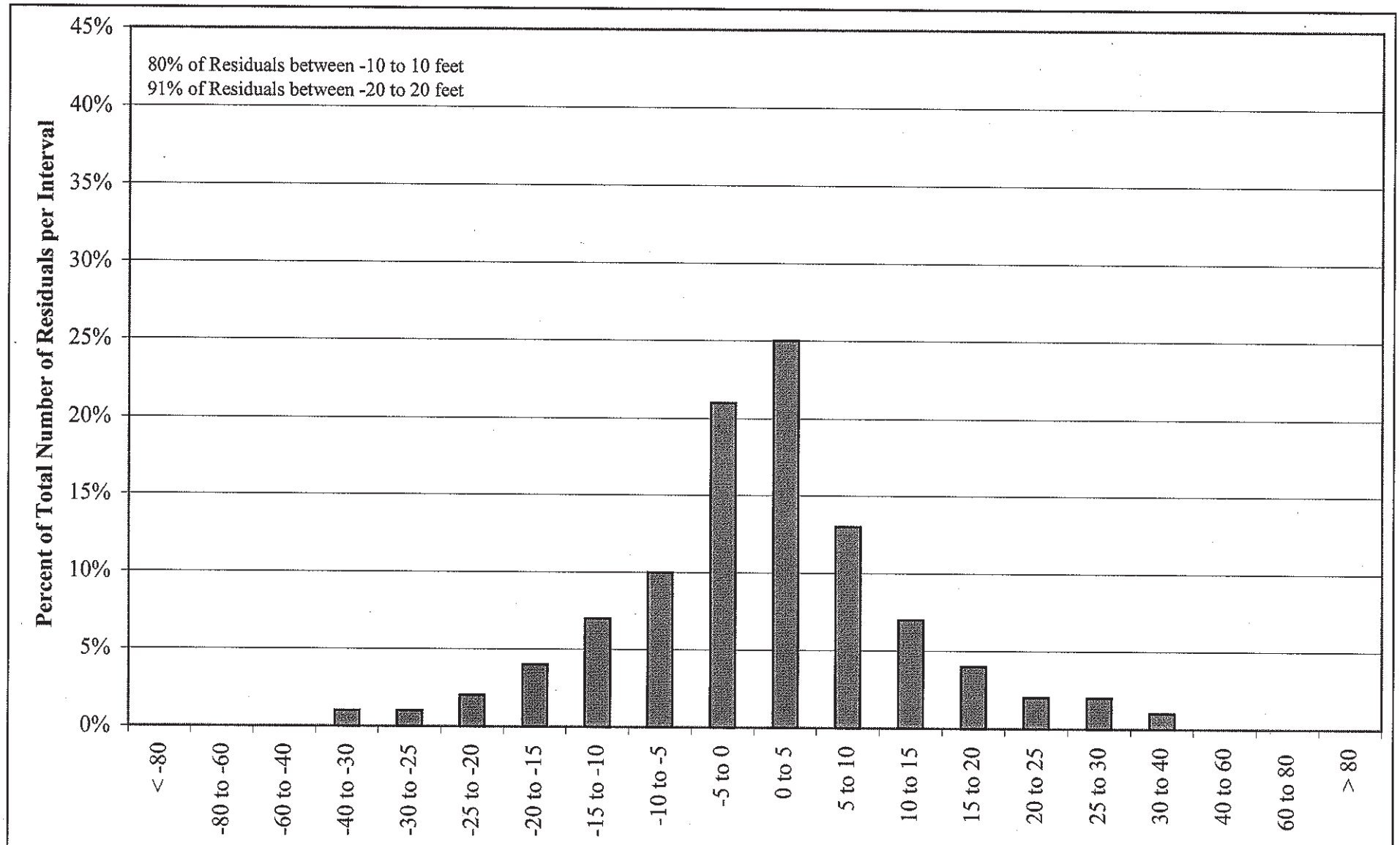
FIGURE 3.17b



ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Residual Groundwater Level between SVIGSM Version 5.0 and Historic Data in the Forebay Subarea - 4 Layer Model for Water Years 1959 through 1994**	MAY 2003 FIGURE 3.17c



ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Residual Groundwater Level between SVIGSM Version 5.0 and Historic Data n the Upper Valley Subarea - 4 Layer Model for Water Years 1959 through 1994**	MAY 2003 FIGURE 3.17d



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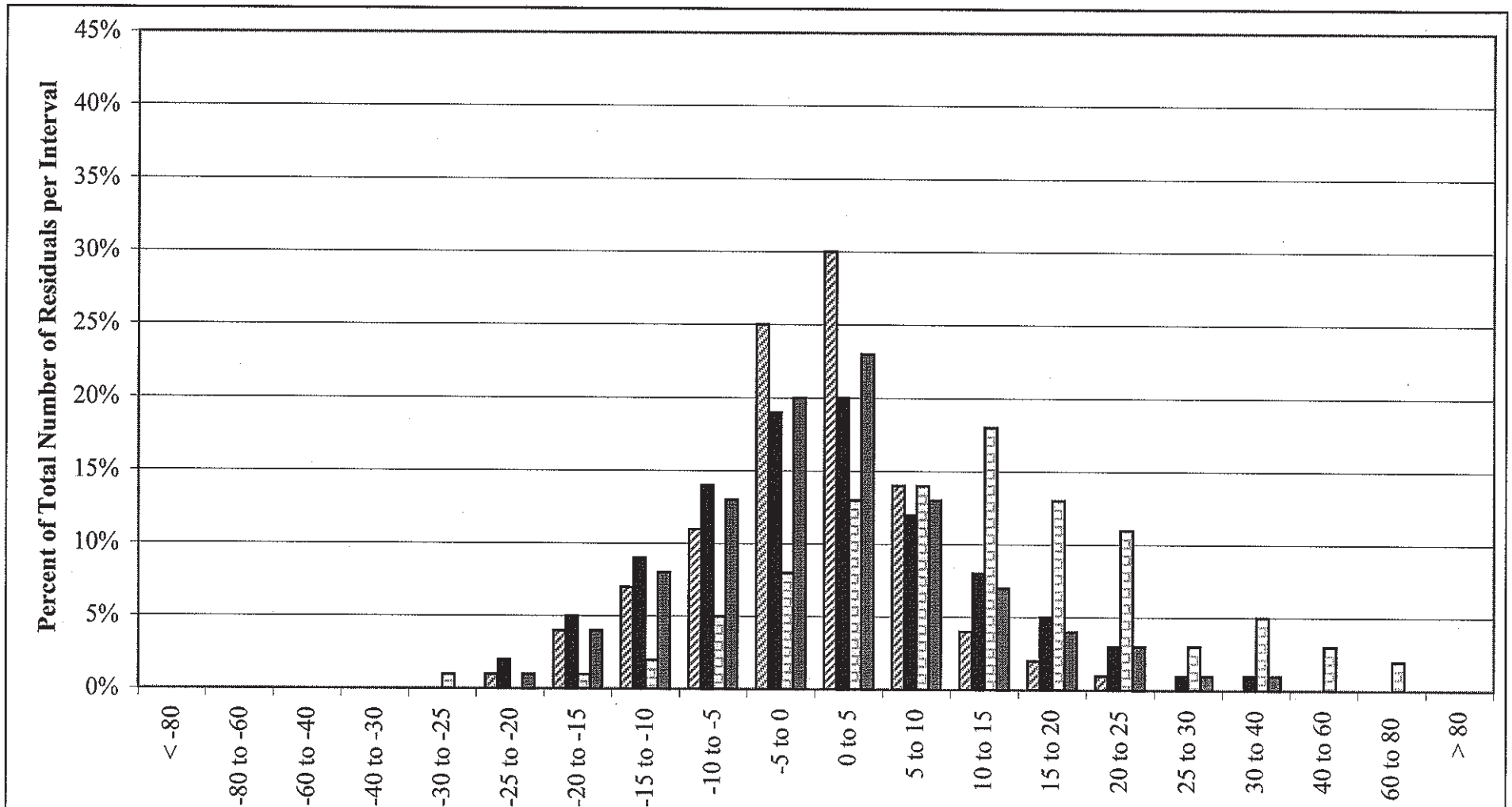
Histogram of Residual Groundwater Levels between SVIGSM Version 5.0 and Historic Data - 4 Layer Model for Water Years 1959 through 1994

MAY 2003

FIGURE 3.18a



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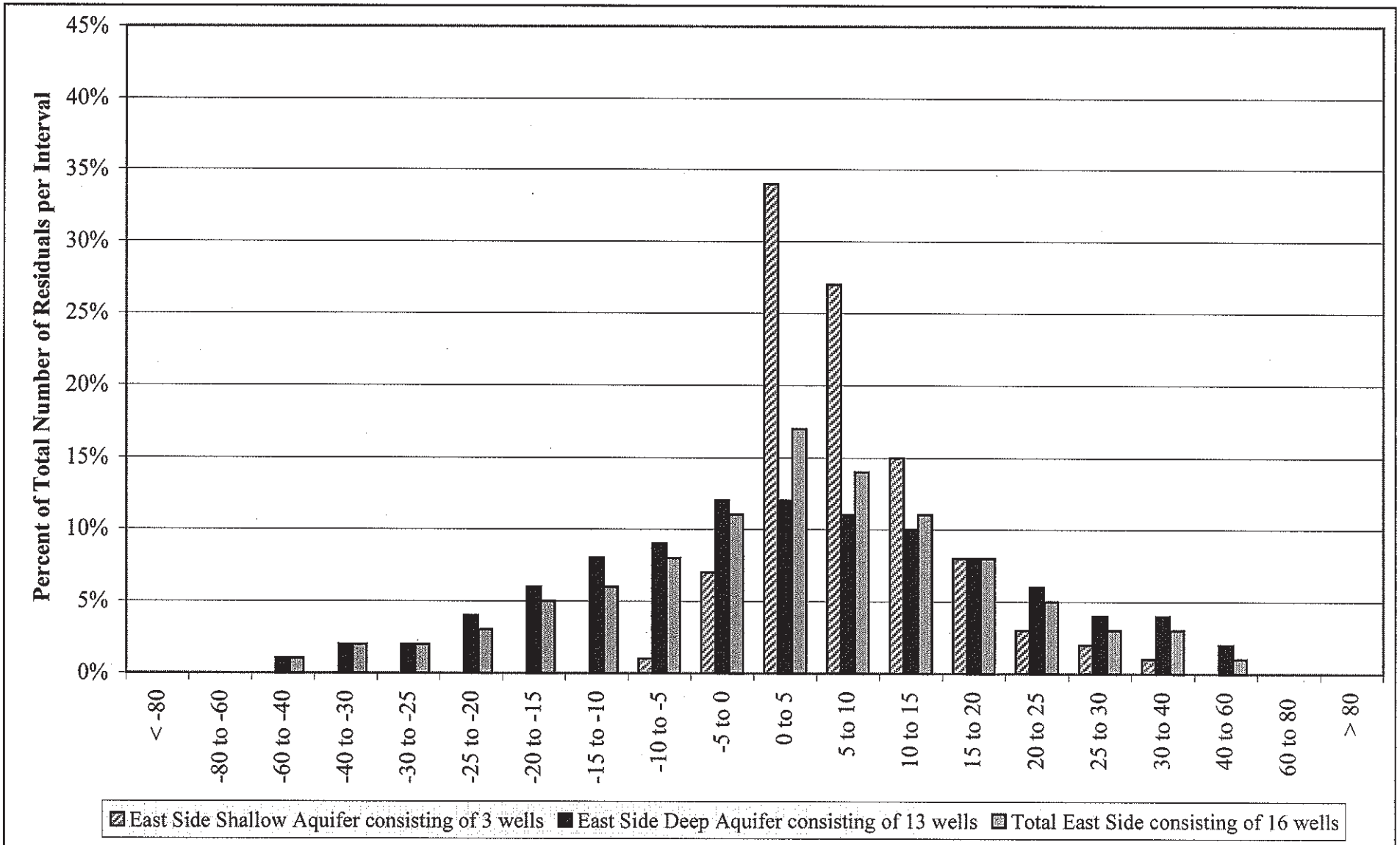
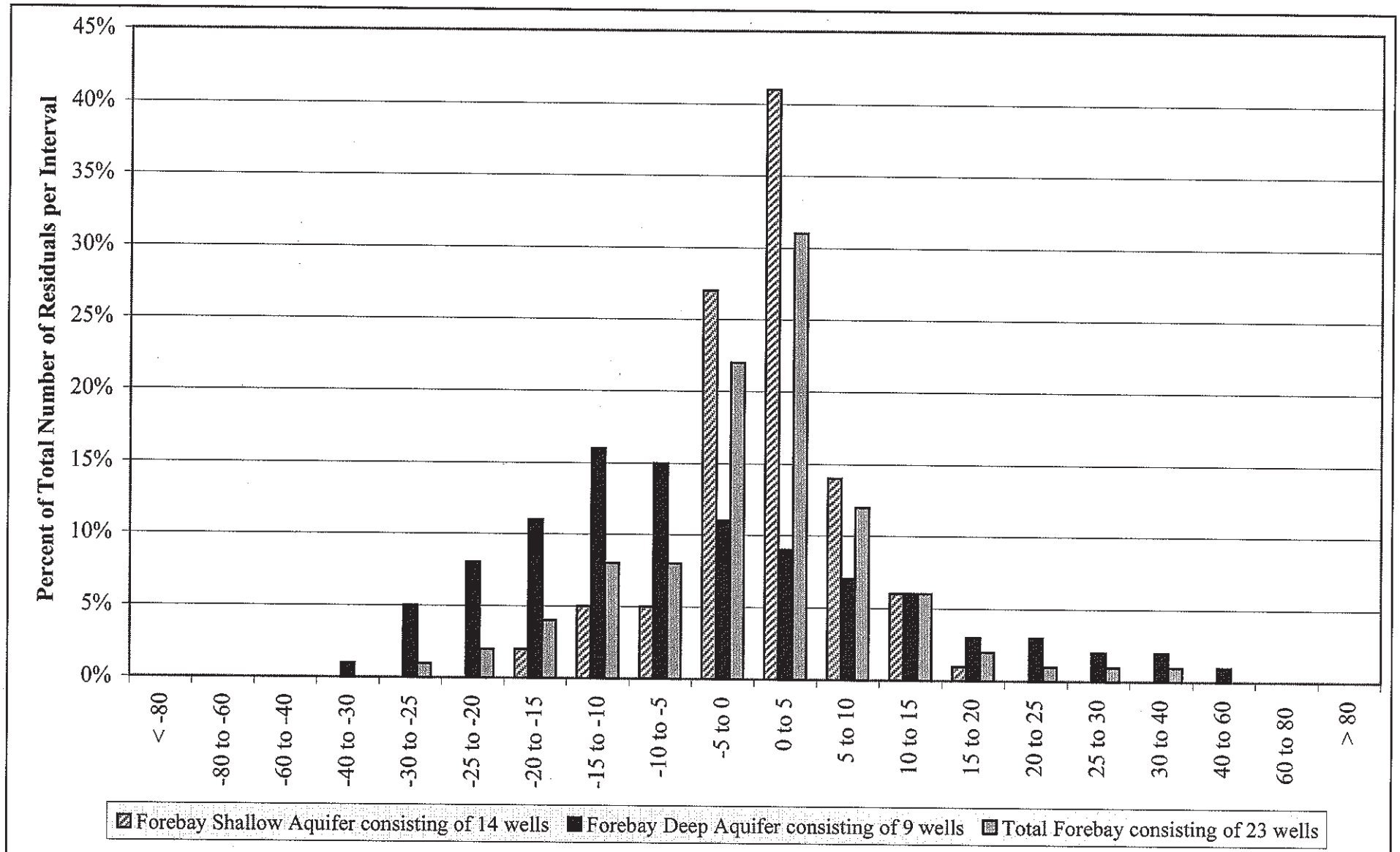
Histogram of Residual Groundwater Levels between SVIGSM Version 5.0 and Historic Data in Pressure Subarea - 4 Layer Model for Water Years 1959 through 1994

MAY 2003

FIGURE 3.18b



ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Histogram of Residual Groundwater Levels between SVIGSM Version 5.0 and Historic Data in East Side Subarea - 4 Layer Model for Water Years 1959 through 1994**	MAY 2003 FIGURE 3.18c



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Histogram of Residual Groundwater Levels between SVIGSM Version 5.0 and Historic Data in Forebay Subarea - 4 Layer Model for Water Years 1959 through 1994

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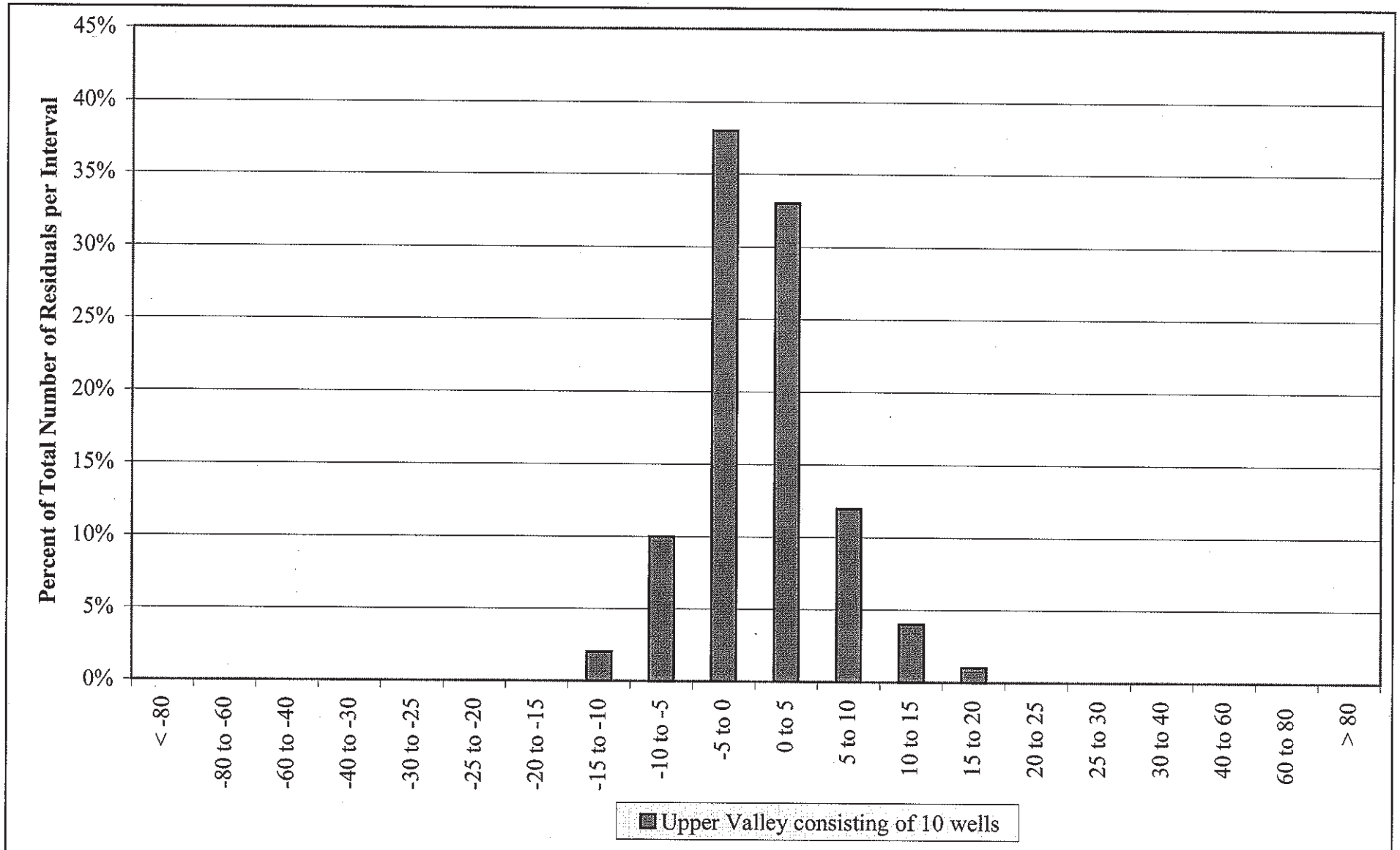
Figure 3.18d



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Histogram of Residual Groundwater Levels between SVIGSM Version 5.0 and Historic Data in Upper Valley Subarea - 4 Layer Model for Water Years 1959 through 1994

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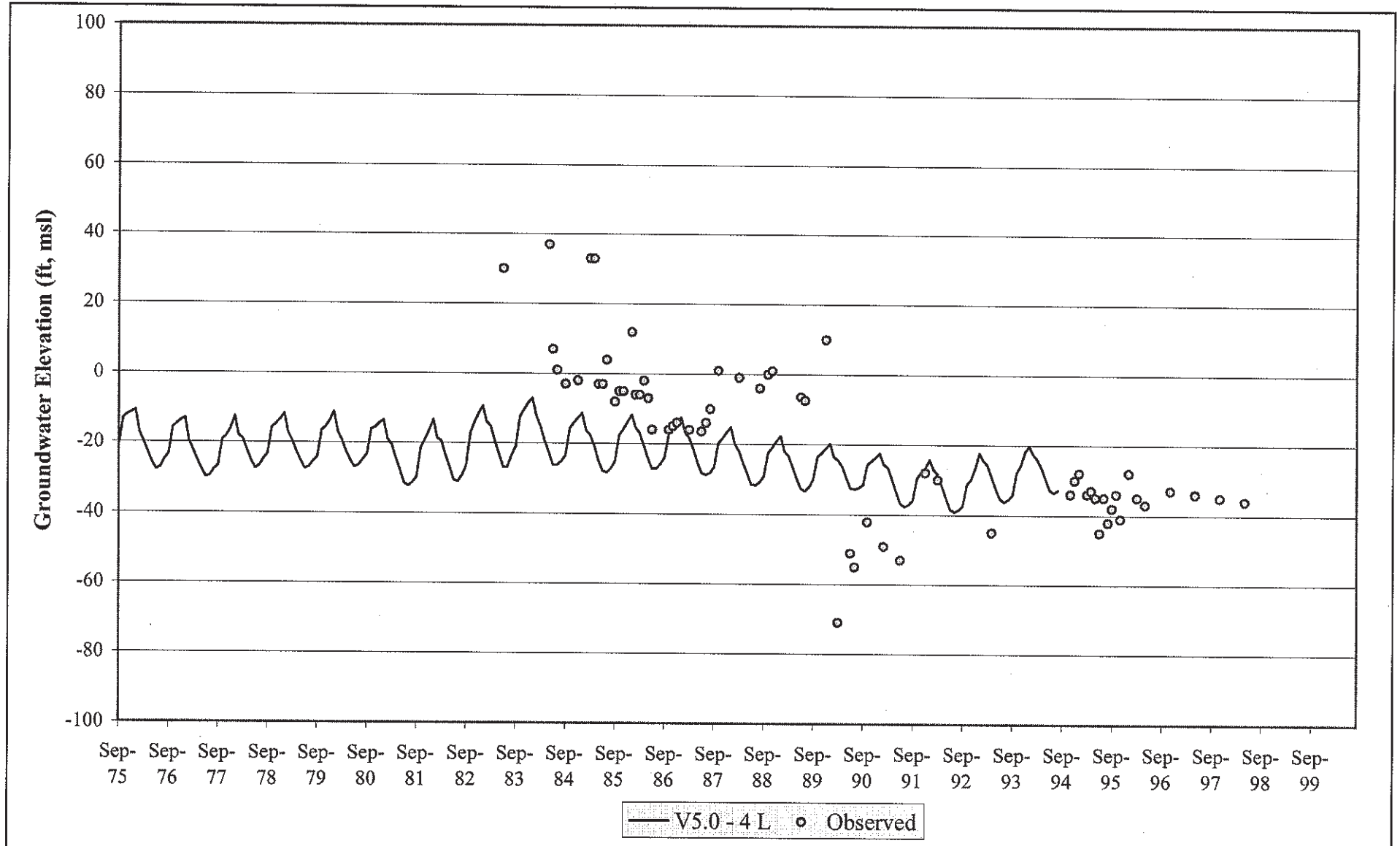
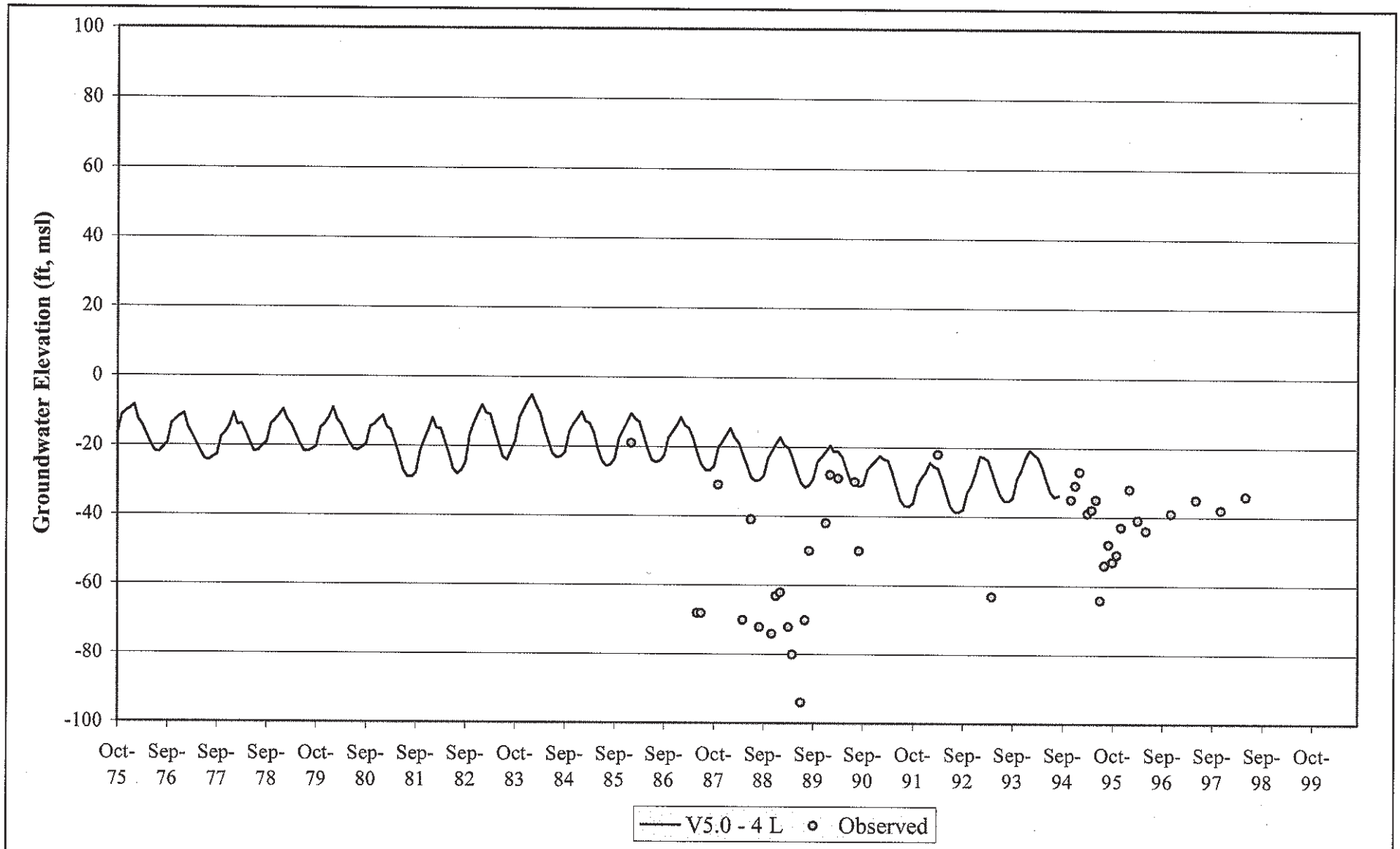
Figure 3.18e



ORIME	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Calibration Well 74 - Pressure Subarea MCWD #10 - Upper Deep Aquifer**	MAY 2003 FIGURE 3.19



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Calibration Well 75 - Pressure Subarea MCWD #11 - Upper Deep Aquifer

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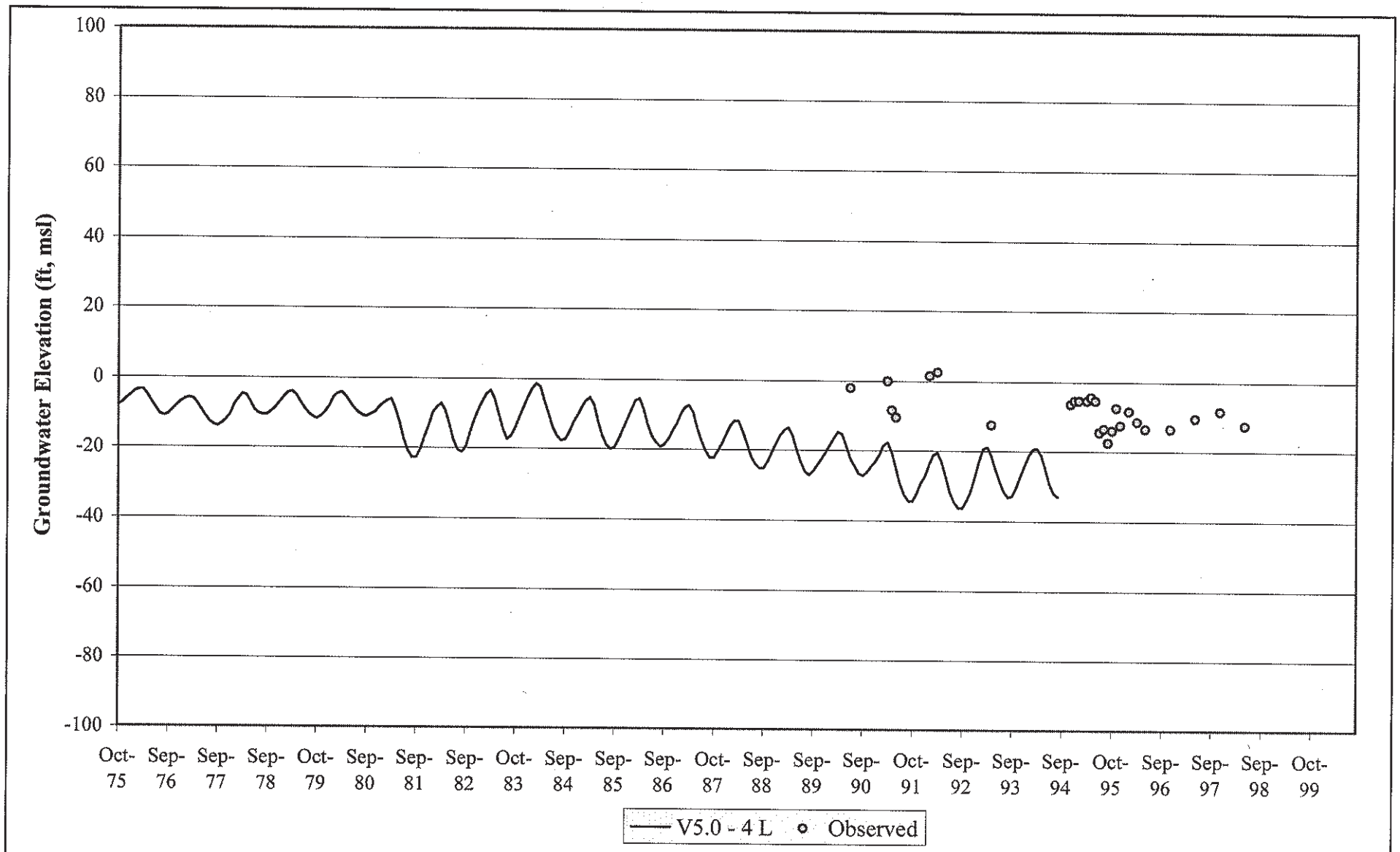
FIGURE 3.20



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Calibration Well 76 - Pressure Subarea MCWD #12 - Upper Deep Aquifer

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FIGURE 3.21

that the model is reasonably simulating the annual trends as well as the seasonal fluctuations in the MCWD wells although the levels may not match. It is noteworthy that these wells are currently assigned as pumping wells in the model. As such, the simulated groundwater heads potentially represent dynamic heads.

BASELINE CONDITION

The baseline conditions developed for the Salinas Valley Water Project were adopted for this effort. The following are changes made to the baseline conditions scenario:

1. Updated stratigraphy data were included;
2. Updated groundwater pumping for MCWD was simulated using MCWD wells at a rate of approximately 2,400 AFY;
3. MCWD wells 10 and 11 pump from Layer 3 and accounts for 73% of groundwater production and Well 12 pumps from Layer 4 and accounts for 27% of groundwater production; and
4. Updated aquifer and streambed parameters were included.

The baseline conditions were simulated and used in the Water Supply Reliability and Safe Yield analysis.

SECTION 4 WATER SUPPLY RELIABILITY AND SAFE YIELD ANALYSIS

DEFINITION

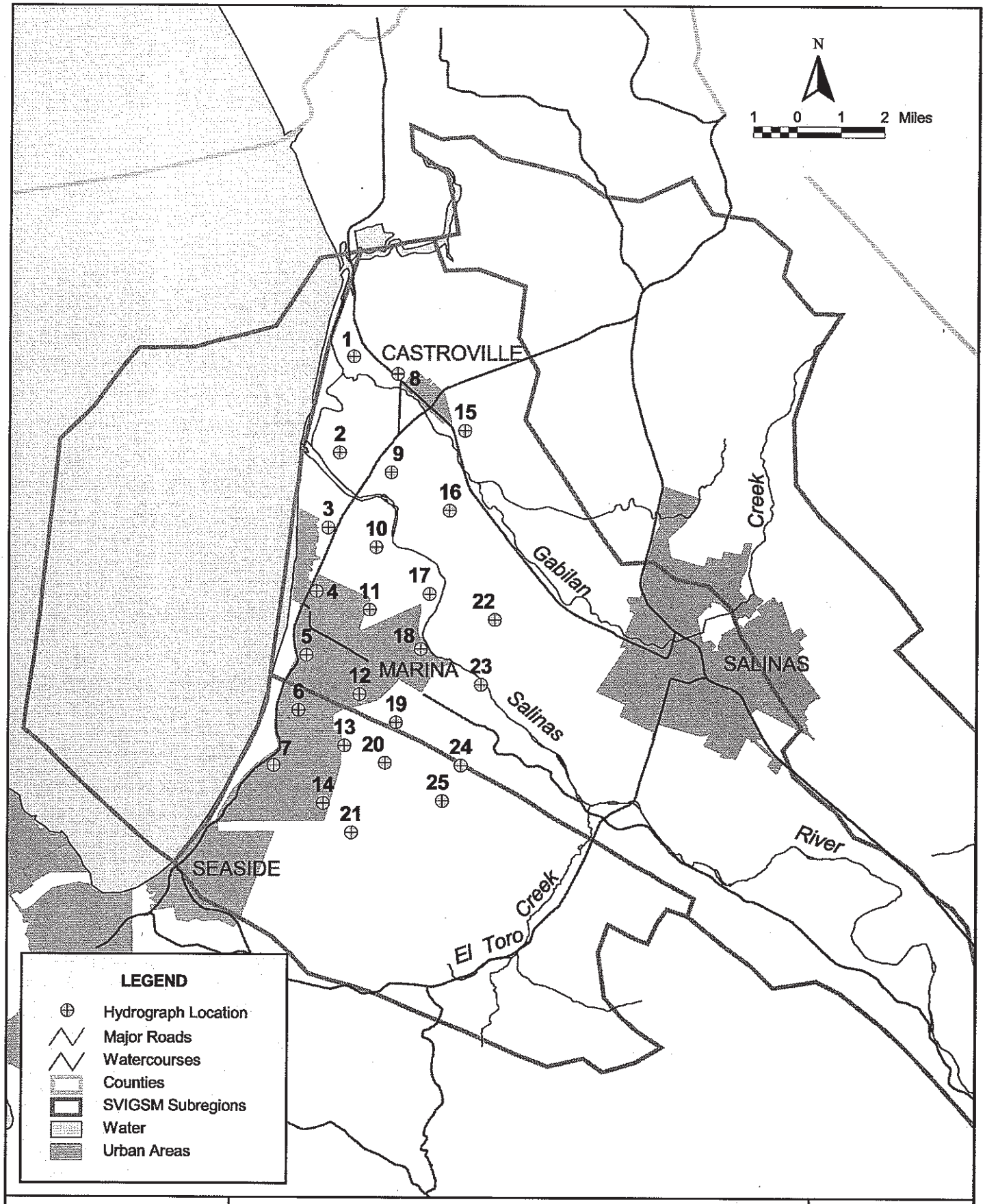
The textbook definition of "safe or sustainable yield" of an aquifer system is the average annual withdrawal that can be taken from the groundwater system without causing a long-term degrading effect in the quantity or quality of the groundwater. This limited definition assumes that the groundwater system is an isolated system without interaction with the surface water processes, such as a stream system. Moreover, the definition is not applicable to an integrated and multi-layered groundwater system in which the operation of one layer affects the groundwater levels in the adjacent layers. In general, safe or sustainable yield may depend on the following factors:

1. The hydrologic period considered to estimate the safe yield;
2. The importance of the groundwater system as a source of supply, compared to other potential sources; and
3. The degree of tolerance in the degradation of quality or decline in quantity of groundwater.

Therefore, a more practical definition for the safe or sustainable yield of a multi-layered and integrated aquifer system is the average annual withdrawal from the aquifer layer or the aquifer system, such that the long-term quantity and quality of the aquifer system as a whole is not degraded.

SAFE YIELD ANALYSIS

To evaluate the safe or sustainable yield of the deep aquifers, a set of response curves are developed to represent the impacts of changing groundwater pumping in MCWD wells. The baseline groundwater pumping at the three MCWD wells is 2,400 AFY; 1,750 AFY from layer 3, and 650 AFY from layer 4. These curves relate changes in MCWD baseline groundwater pumping in the following: 1) average groundwater levels in each layer; 2) groundwater flow across the coast; and 3) vertical groundwater flow between the aquifer layers. In order to monitor the changing groundwater levels in the coastal areas, a set of monitoring locations were assigned in the model. Figure 4.1 shows the locations of 25 points used to monitor changing groundwater levels over time. Figures 4.2 through 4.5 show the response of average groundwater levels to changes in MCWD baseline groundwater pumping.



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Pumping Sensitivity Analysis
Hydrograph Location Map

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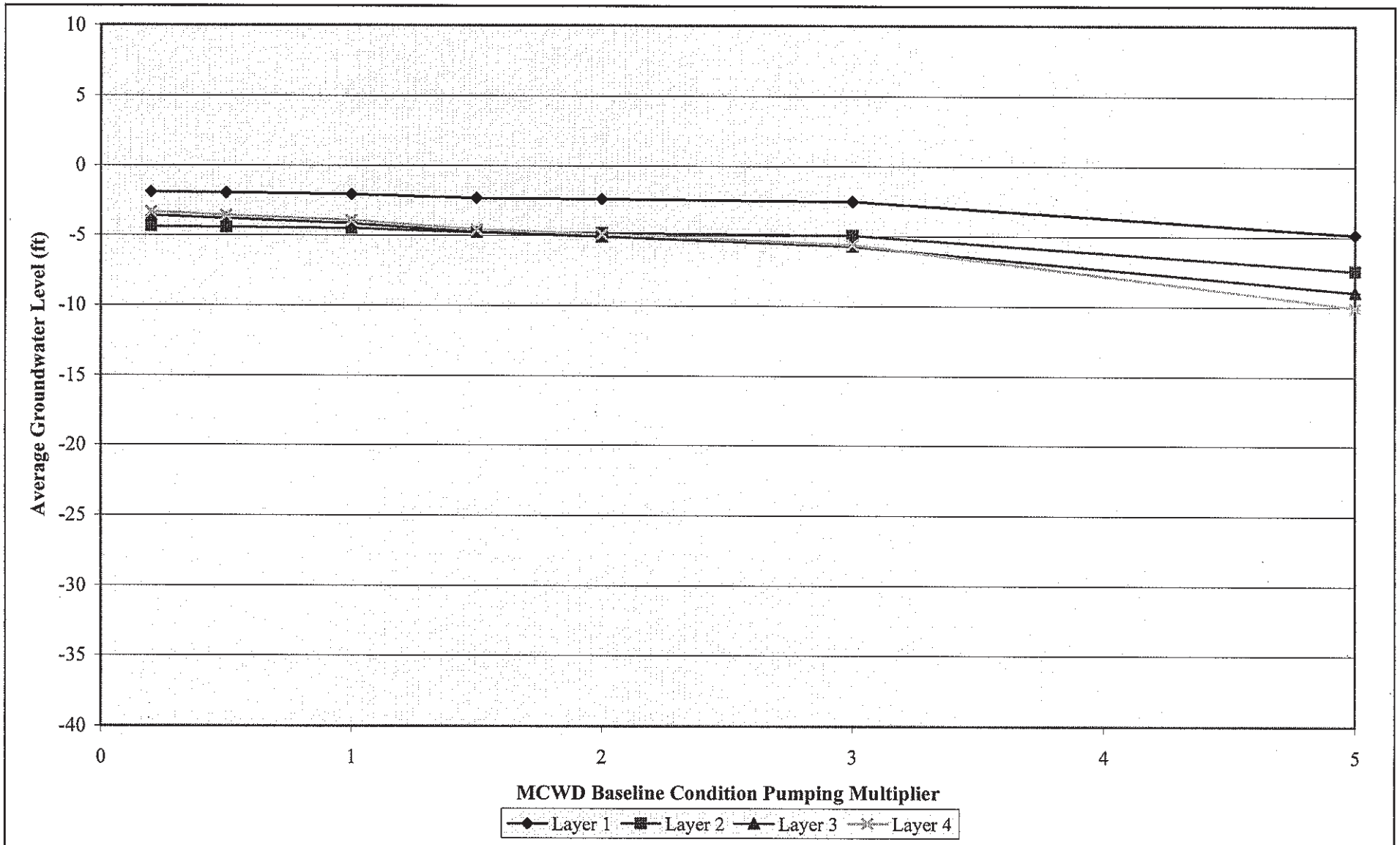
FIGURE 4.1



Baseline conditions occur when x-axis is equal to 1

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Response Curve of Pumping and Average Groundwater Levels for Coastal Hydrograph Locations per Aquifer

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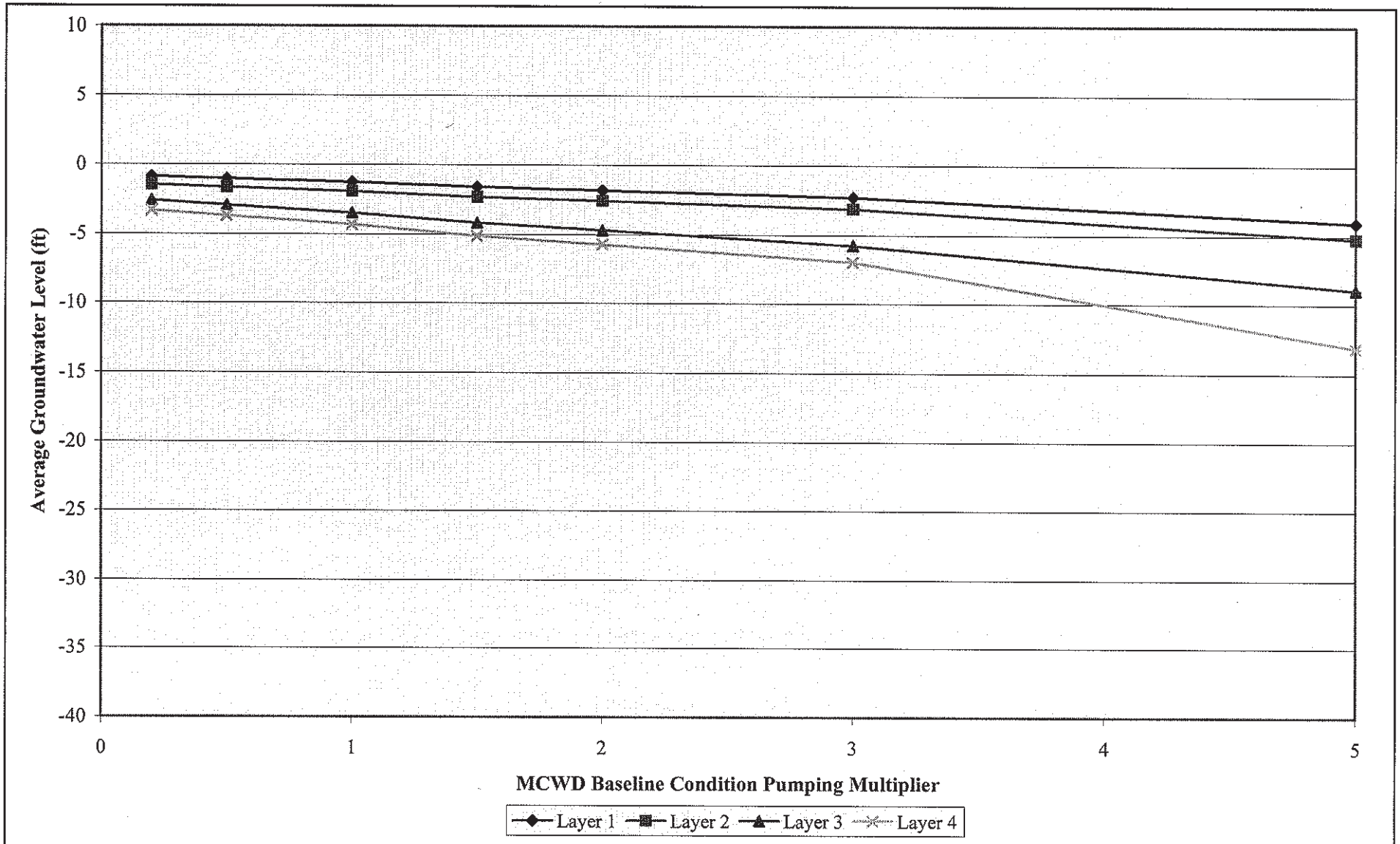
FIGURE 4.2



Baseline conditions occur when x-axis is equal to 1

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DEEP AQUIFER INVESTIGATIVE STUDY

Response Curve of Pumping and Average Annual (1959-94) Groundwater Levels for Coastal Hydrograph of Well 5

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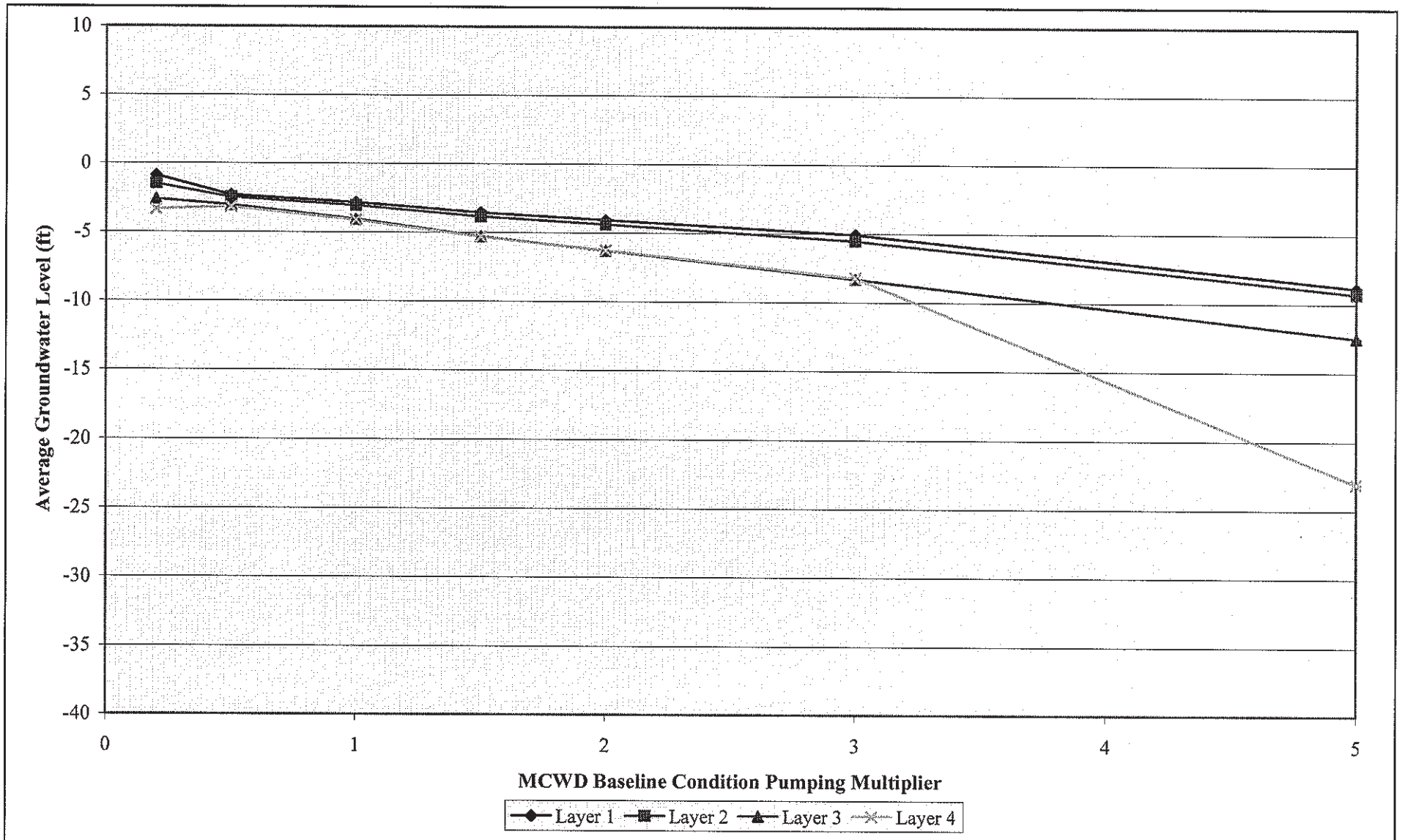
FIGURE 4.3



Baseline conditions occur when x-axis is equal to 1

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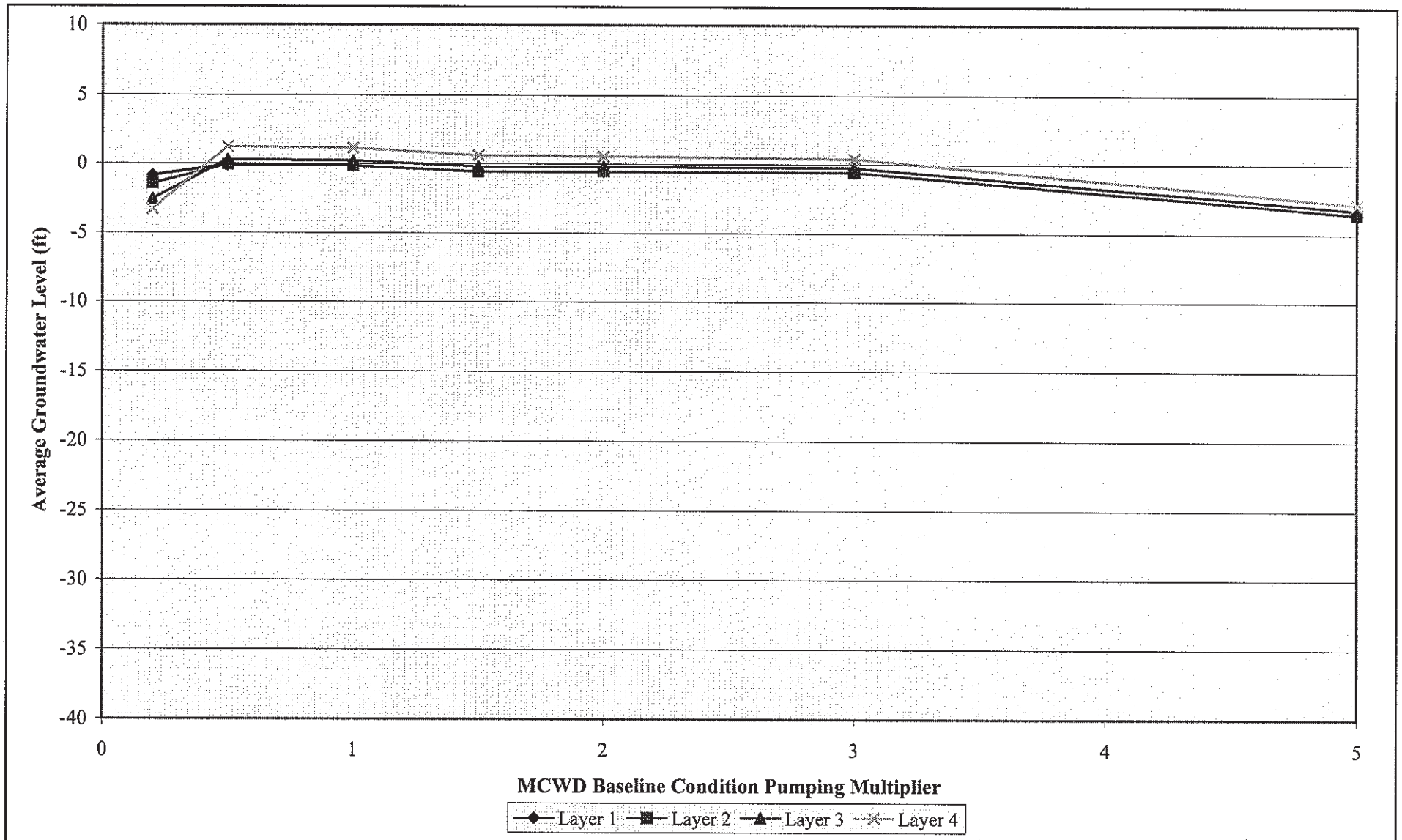
DEEP AQUIFER INVESTIGATIVE STUDY
Response Curve of Pumping and Average Annual (1959-94) Groundwater Levels for Coastal Hydrograph of Well 12

MAY 2003

FIGURE 4.4



Baseline conditions occur when x-axis is equal to 1

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DEEP AQUIFER INVESTIGATIVE STUDY

Response Curve of Pumping and Average Annual (1959-94) Groundwater Levels for Coastal Hydrograph Well 24

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FIGURE 4.5

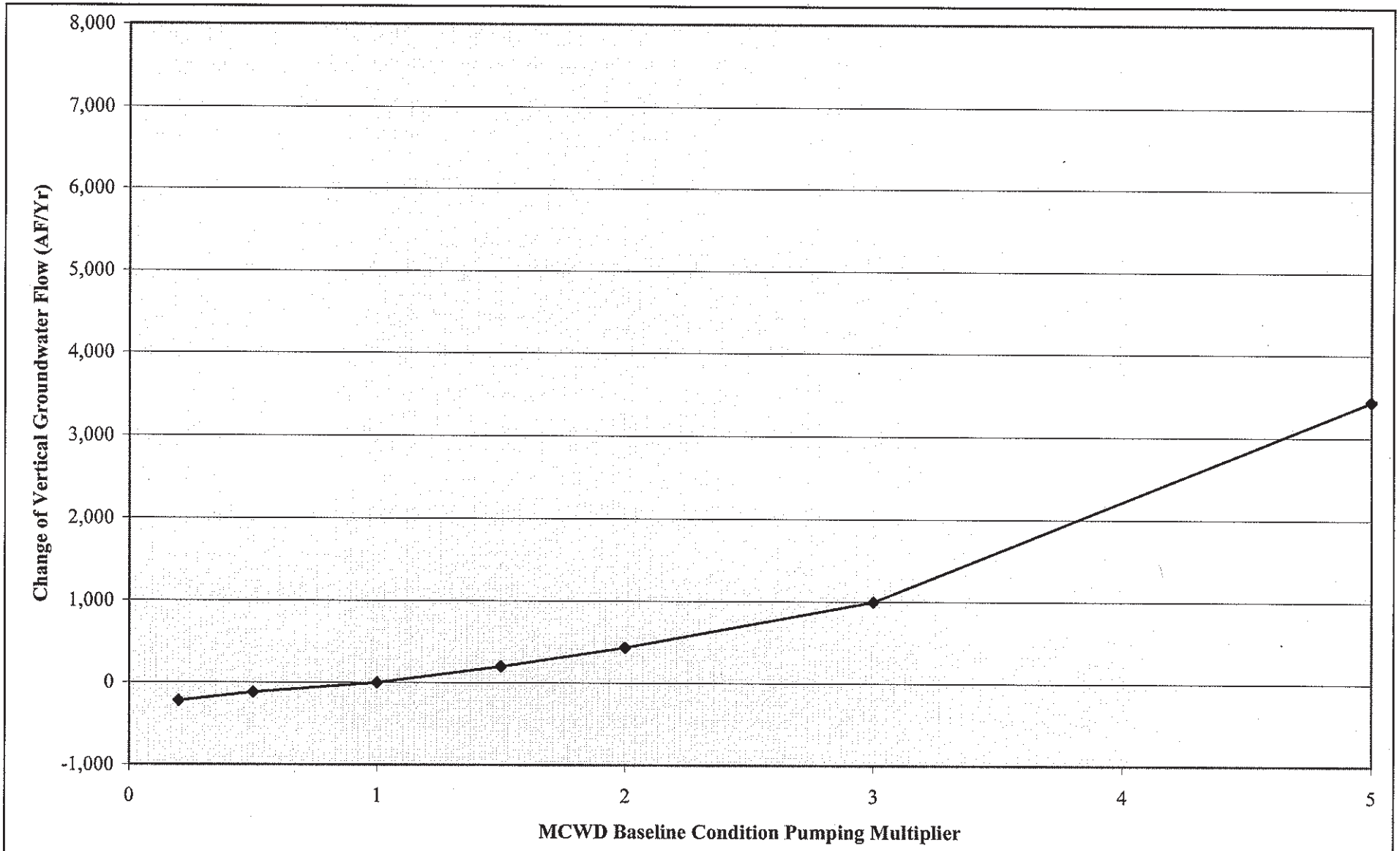
Figure 4.2 shows the response of the groundwater system as an average of all 25 hydrograph locations for each layer. Figures 4.3 through 4.5 show average groundwater levels, per layer, for three selected locations. All the figures indicate that groundwater heads will continue to decline in almost all aquifer layers if groundwater production from the deep aquifers is increased significantly from baseline levels.

Figure 4.6 shows the response of vertical groundwater flow to changes in baseline pumping. In general, as pumping increases there is an increase in vertical flow from Aquifer 1 to Aquifer 2.

Figure 4.7 shows the change in coastal groundwater flow from the baseline conditions because of changes in baseline groundwater pumping. In this case, the coastal subsurface flows are used as a surrogate for rate of seawater intrusion. In general, the inland groundwater flow towards the coast increases with groundwater pumping increases. It should be noted that increases in the coastal flows in the 180-foot aquifer and the deep aquifers are larger than those in the 400-foot aquifer. This may be due to the fact that increases in deep aquifers groundwater pumping induce more inland subsurface flux in the deep aquifers, as well as more downward flow of groundwater from the 400-foot aquifer. However, the 400-foot aquifer is also rapidly replenished by leakage from the 180-foot aquifer. Therefore, the net change in the 400-foot aquifer may not be as significant, even though the 180-foot aquifer appears to take a greater toll in seawater intrusion because of its substantially higher transmissivities.

POTENTIAL WATER SUPPLY ALTERNATIVES

In light of the varying range of safe or sustainable yield from the deep aquifers, and in order to analyze a set of realistic water supply options for the interim and/or long-term needs of MCWD, three alternative scenarios have been developed and analyzed. The focus of this analysis is to evaluate the impacts of these alternatives on the groundwater levels and inland subsurface flow across the coastline. Table 4.1 defines the three potential water supply scenarios that are analyzed. These scenarios are defined in coordination with the water supply master plan project, currently ongoing. These alternative groundwater supply options focus on maintaining the current groundwater production from MCWD Well Nos. 10, 11, and 12. Further, the additional supplies to meet the future needs of Marina and/or Fort Ord may come from a combination of the upper deep aquifer or 400-foot aquifer from a possible well further south along Reservation Road (in the vicinity of Well 32). Figure 4.8 shows the existing and proposed MCWD groundwater production wells. Increased pumping from Layer 4 is not considered a viable alternative given the lack of potential yield. These alternatives are presented to show the range of alternatives that can be evaluated using the updated SVIGSM. They do not necessarily represent the actual water supply scenarios that the MCWD may be considering in their water supply master plan.



Baseline conditions occur when x-axis is equal to 1

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Response Curve of Pumping for Change of Average Annual (1959-94) Vertical Groundwater Flow from Aquifer 1 to 2 in Pressure and Fort Ord Subregions

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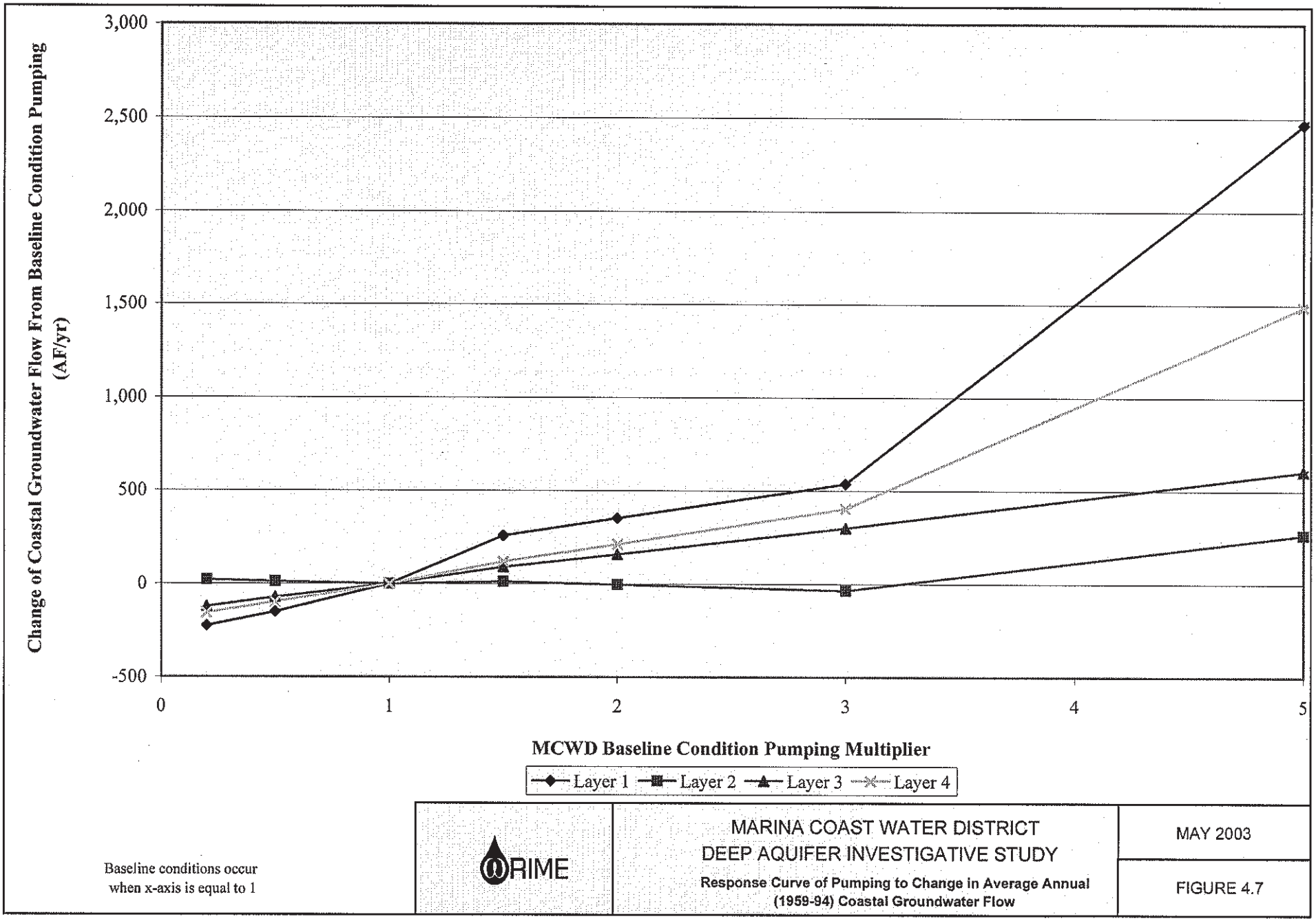
FIGURE 4.6



Baseline conditions occur when x-axis is equal to 1

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Response Curve of Pumping to Change in Average Annual (1959-94) Coastal Groundwater Flow

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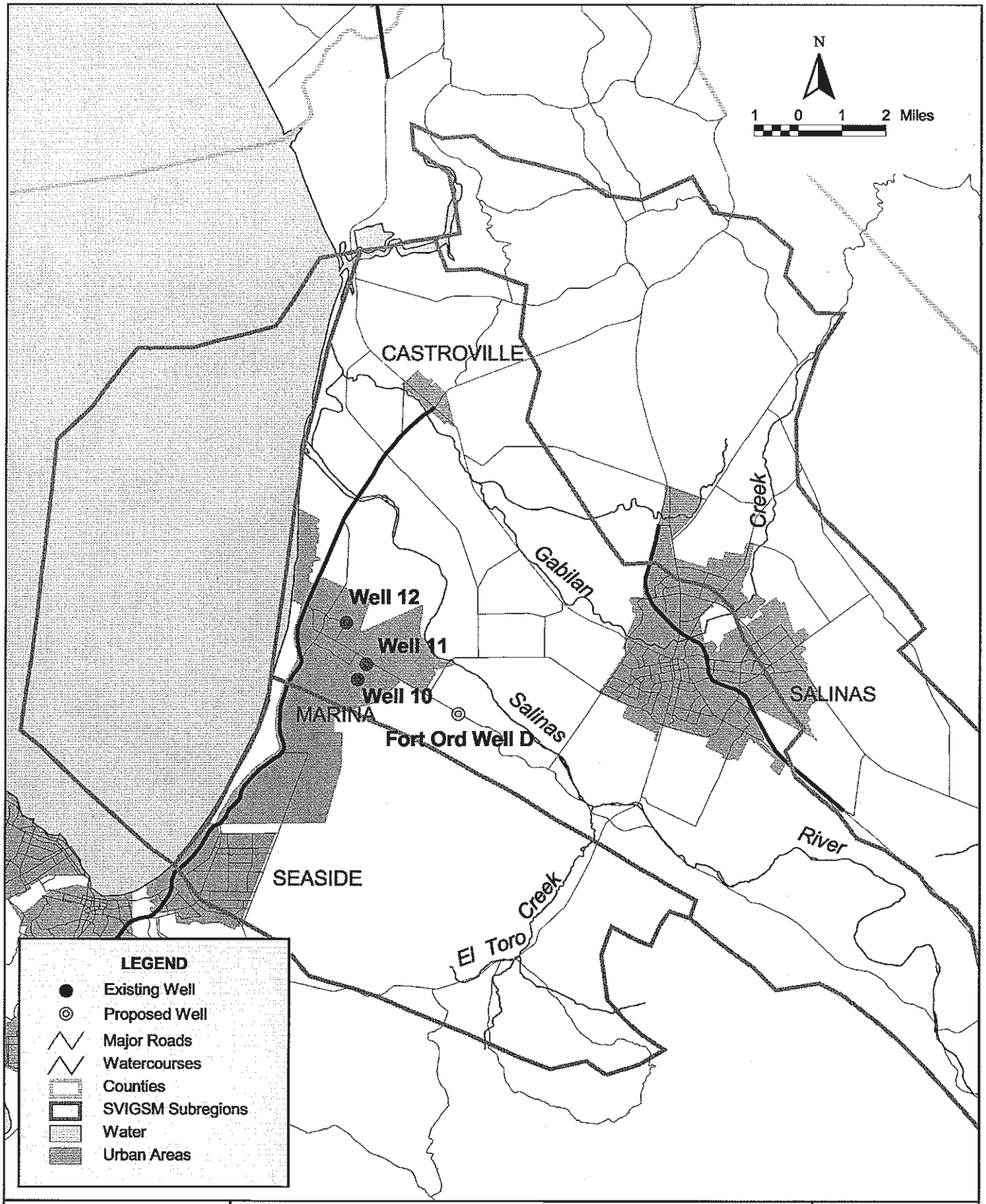
FIGURE 4.7



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MCWD Existing and Proposed Groundwater Production Well Location Map

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FIGURE 4.8

Table 4.1 Baseline Condition and Potential Water Supply Alternatives

Alternative	Description
Baseline	SVWP Baseline assumptions consisting of: 1995 land and water use; Castroville Seawater Intrusion Project is operational; 17,500 AFY of future deliveries to San Luis Obispo County from Nacimiento Reservoir; and MCWD present level of groundwater pumping (2,400 AFY) from existing wells
Alternative 1	MCWD Baseline condition pumping 2,400 AFY from deep aquifers + 1,400 AFY from MCWD upper deep aquifer wells (no change in lower deep well)
Alternative 2	2,400 AFY from deep aquifers + 1,400 AFY from MCWD upper deep aquifer wells (no change in lower deep well) 4,200 AFY from upper deep aquifer at Well 32
Alternative 3	2,400 AFY from deep aquifers + 1,400 AFY from MCWD upper deep aquifer wells (no change in lower deep well) 4,200 AFY from 400-foot aquifer at Well 32

Table 4.2 compares the average groundwater levels, per aquifer, for the 25 coastal monitoring locations.

Table 4.2 Comparison of Average Groundwater Levels (ft, MSL) per Aquifer for Coastal Monitoring Locations

	Aquifer 1	Aquifer 2	Aquifer 3	Aquifer 4
Baseline	-2.1	-4.5	-4.1	-3.9
Alternative 1	-2.5	-4.9	-4.9	-4.7
Alternative 2	-4.1	-6.7	-7.5	-7.1
Alternative 3	-4.2	-6.9	-6.8	-6.5

Table 4.3 compares the relative impact of the alternatives to the baseline conditions in terms of average annual coastal flux.

Table 4.3 Difference in Average Annual Coastal Groundwater Flow (AFY) Between Supply Alternative and Baseline Conditions for Each Aquifer

	Layer 1	Layer 2	Layer 3	Layer 4
Alternative 1	455	61	137	103
Alternative 2	1,663	273	367	390
Alternative 3	1,620	305	349	323

Table 4.4 shows a comparison of average annual vertical groundwater flow between Aquifers 1 and 2 in the Pressure and Fort Ord subareas.

Table 4.4 Comparison of Average Annual Vertical Groundwater Flow (AFY) between Aquifers 1 and 2 in the Pressure and Fort Ord Subareas

Scenario	Aquifers 1 and 2 (AF)	Aquifers 2 and 3 (AF)	Aquifers 3 and 4 (AF)	Difference in Vertical Flow Change from Baseline Condition		
				Aquifers 1 and 2 (AF)	Aquifers 2 and 3 (AF)	Aquifers 3 and 4 (AF)
Baseline	-60,114	167	2,601	0	0	0
Alternative 1	-61,044	-885	2,733	-929	-1,052	132
Alternative 2	-63,760	-3,984	3,216	-3,646	-4,152	614
Alternative 3	-64,558	-163	3,009	-4,443	-331	407

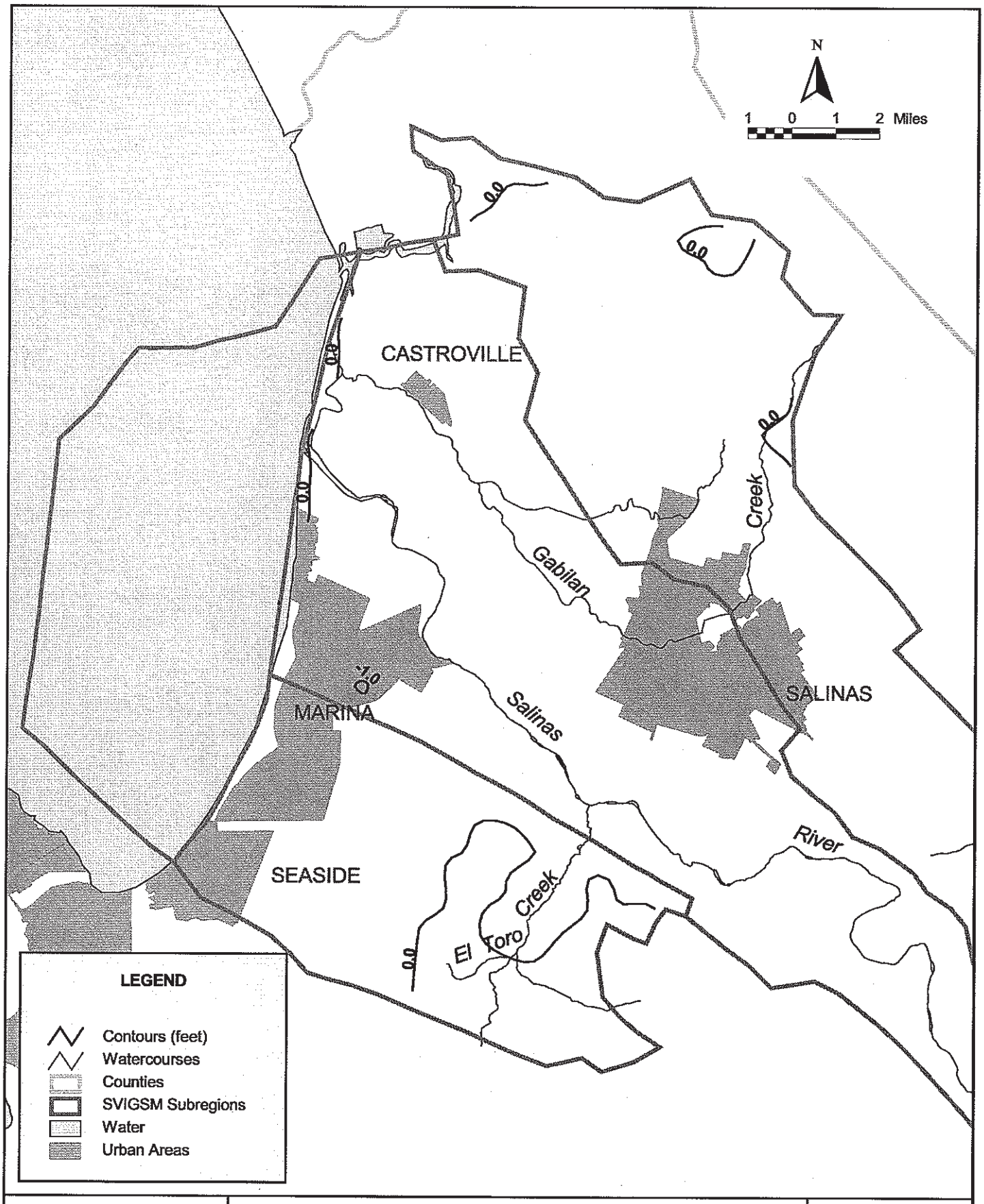
*Positive Values Indicate Upward Flow

Figures 4.9 through 4.20 show September 1994 drawdowns in groundwater heads in various aquifer layers as a result of each alternative groundwater pumping scenario.

Figures 4.9 through 4.12 show the results of long-term pumping under Alternative 1. These figures indicate that the increased long-term MCWD pumping rate in the deep aquifers would cause approximately a 2-feet drawdown in the upper deep aquifer, with much lesser impacts on the other aquifers

Figures 4.13 through 4.16 show the results of long-term pumping under Alternative 2. This alternative is designed to evaluate the effects of additional groundwater production in the upper deep aquifer from the existing MCWD wells, as well as a potential new well further inland, drilled in the upper deep aquifer along Reservation Road. The figures indicate that the additional MCWD pumping from existing wells plus the new well cause approximately 9 feet of decline in the upper deep aquifer groundwater head levels with up to 4 feet and 2 feet of additional decline in groundwater heads in the 400-foot and 180-foot aquifers, respectively.

Figures 4.17 through 4.20 show the results of long-term pumping under Alternative 3. This alternative is designed to evaluate the effects of additional groundwater production in the upper deep aquifer from the existing MCWD wells, as well as a potential new well further inland, drilled in the 400-foot aquifer along Reservation Road. The figures indicate that the additional MCWD pumping from existing wells plus the new well cause approximately 4 feet of decline in the upper deep aquifer groundwater head levels with up to 6 feet and 5 feet of additional decline in groundwater heads in the 400-foot and 180-foot aquifers, respectively.



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Alternative 1 Groundwater Level Difference for Layer 1, September 1994

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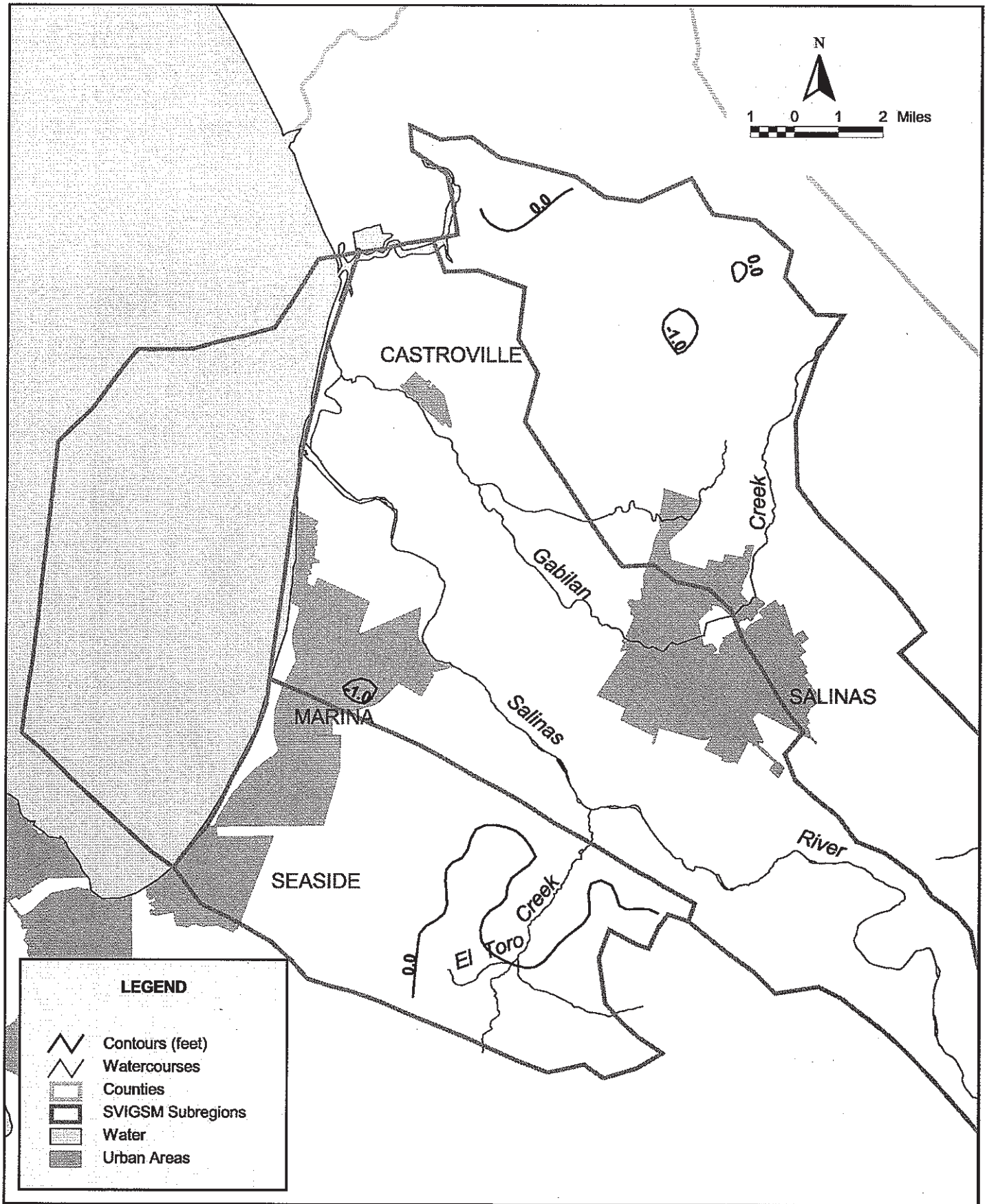
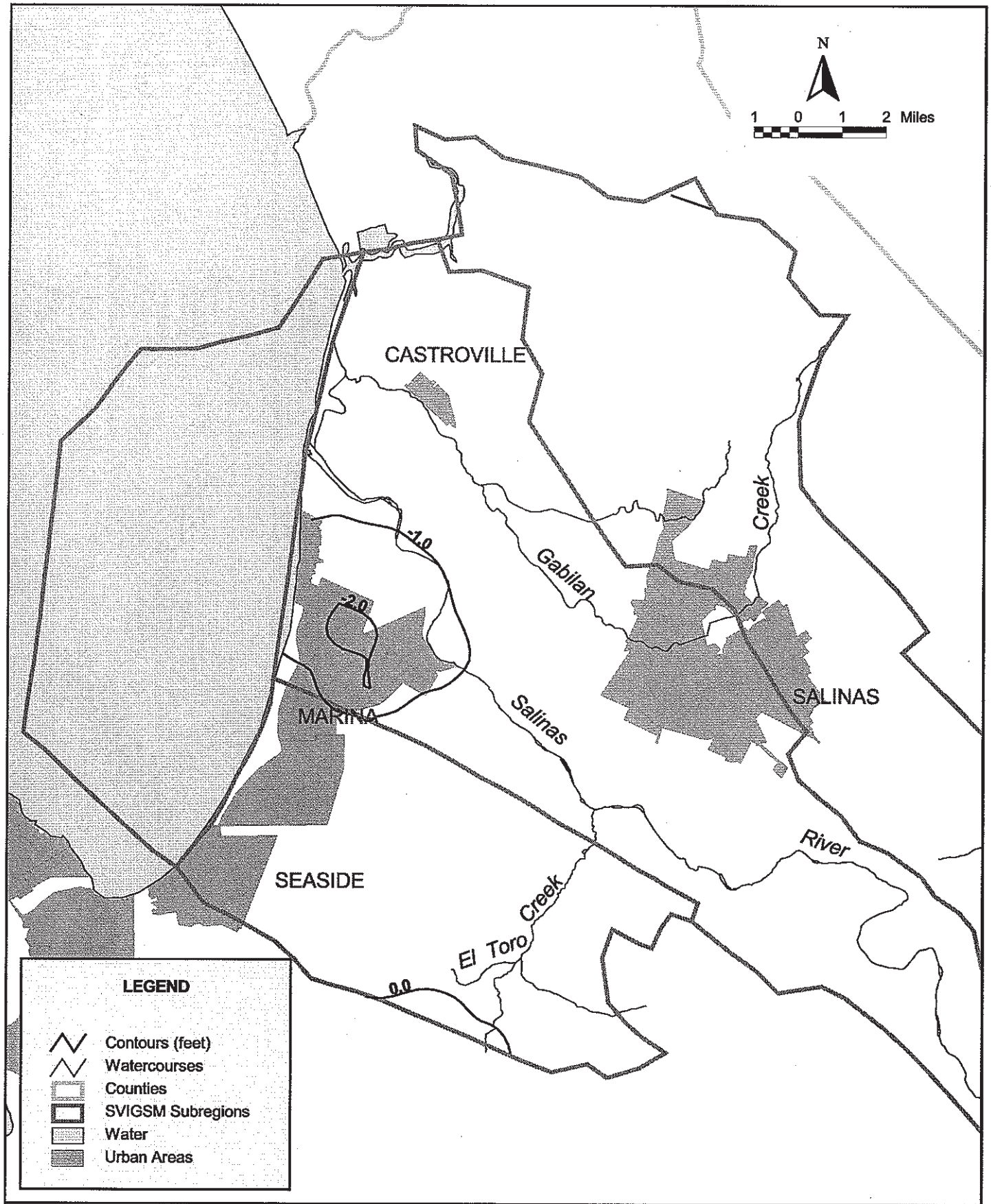
FIGURE 4.9

WRIME Water Resources & Information Management Engineering, Inc.



RIME Water Resources & Information Management Engineering, Inc.	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Alternative 1 Groundwater Level Difference for Layer 2, September 1994**	MAY 2003 FIGURE 4.10



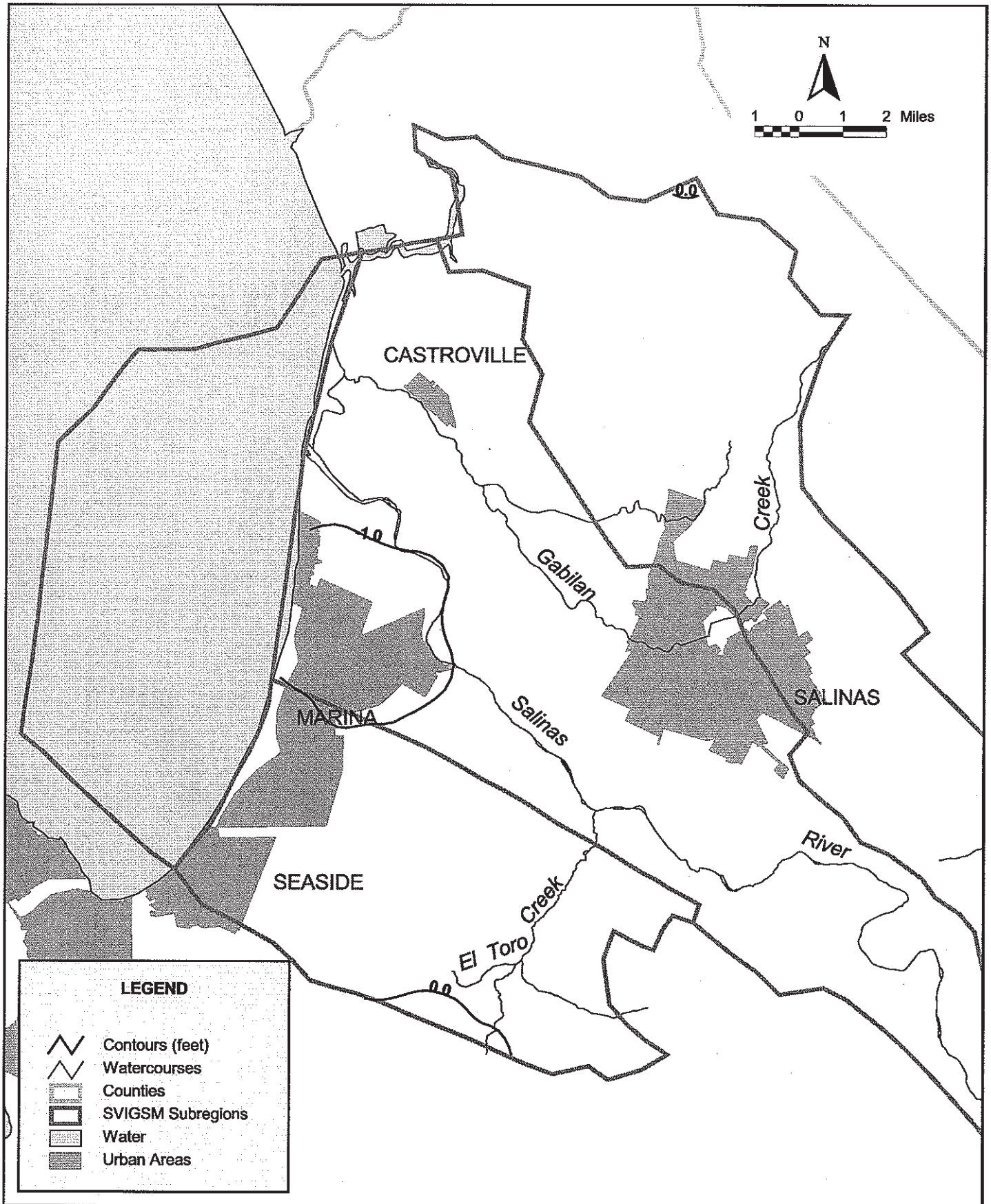
MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Alternative 1 Groundwater Level Difference for Layer 3, September 1994

MAY 2003

FIGURE 4.11

ORIME Water Resources & Information Management Engineering, Inc.



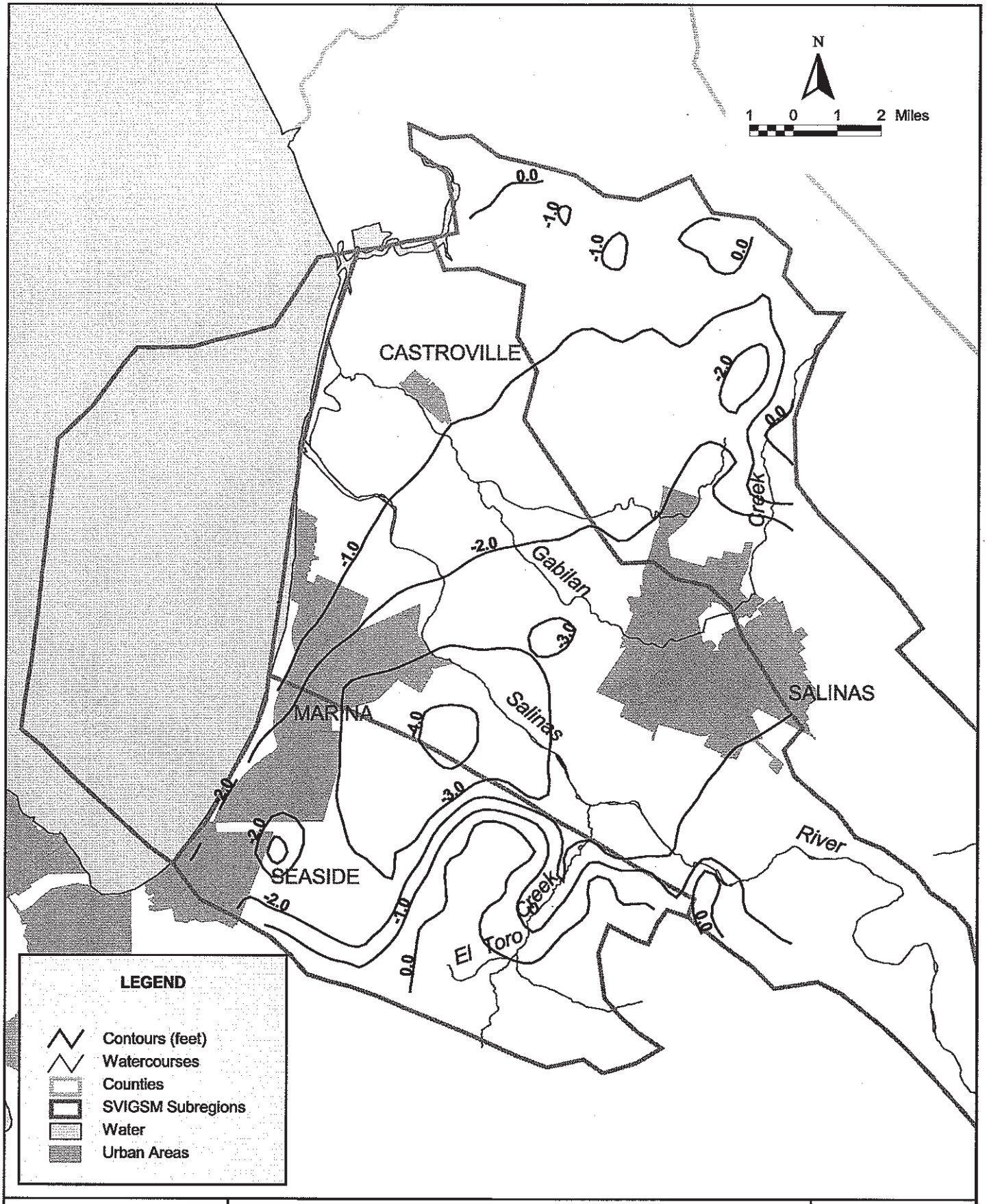
WRIME Water Resources & Information Management Engineering, Inc.

MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

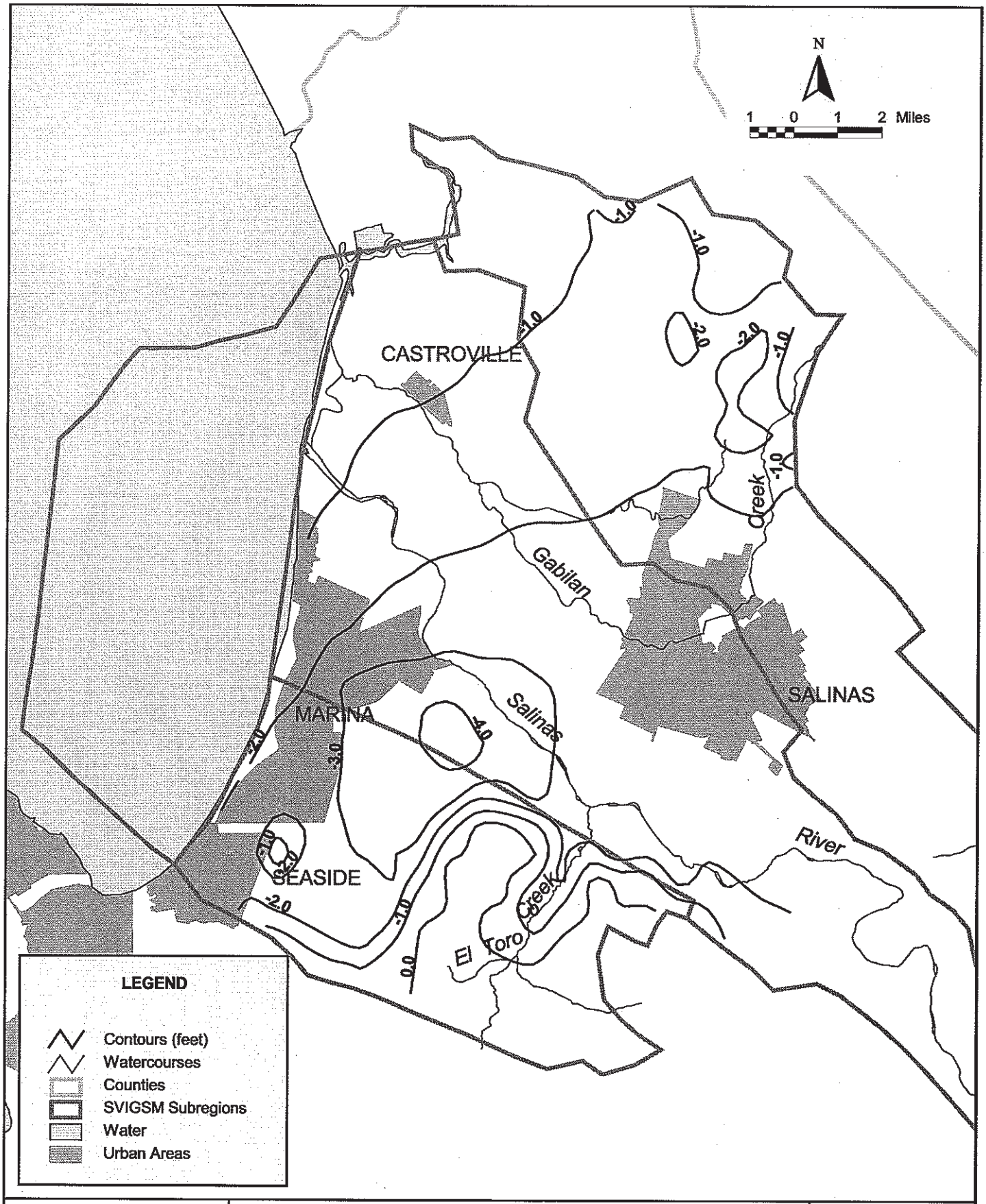
Alternative 1 Groundwater Level Difference for Layer 4, September 1994

MAY 2003

FIGURE 4.12



ORIME Water Resources & Information Management Engineering, Inc.	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Alternative 2 Groundwater Level Difference for Layer 1, September 1994**	MAY 2003 FIGURE 4.13



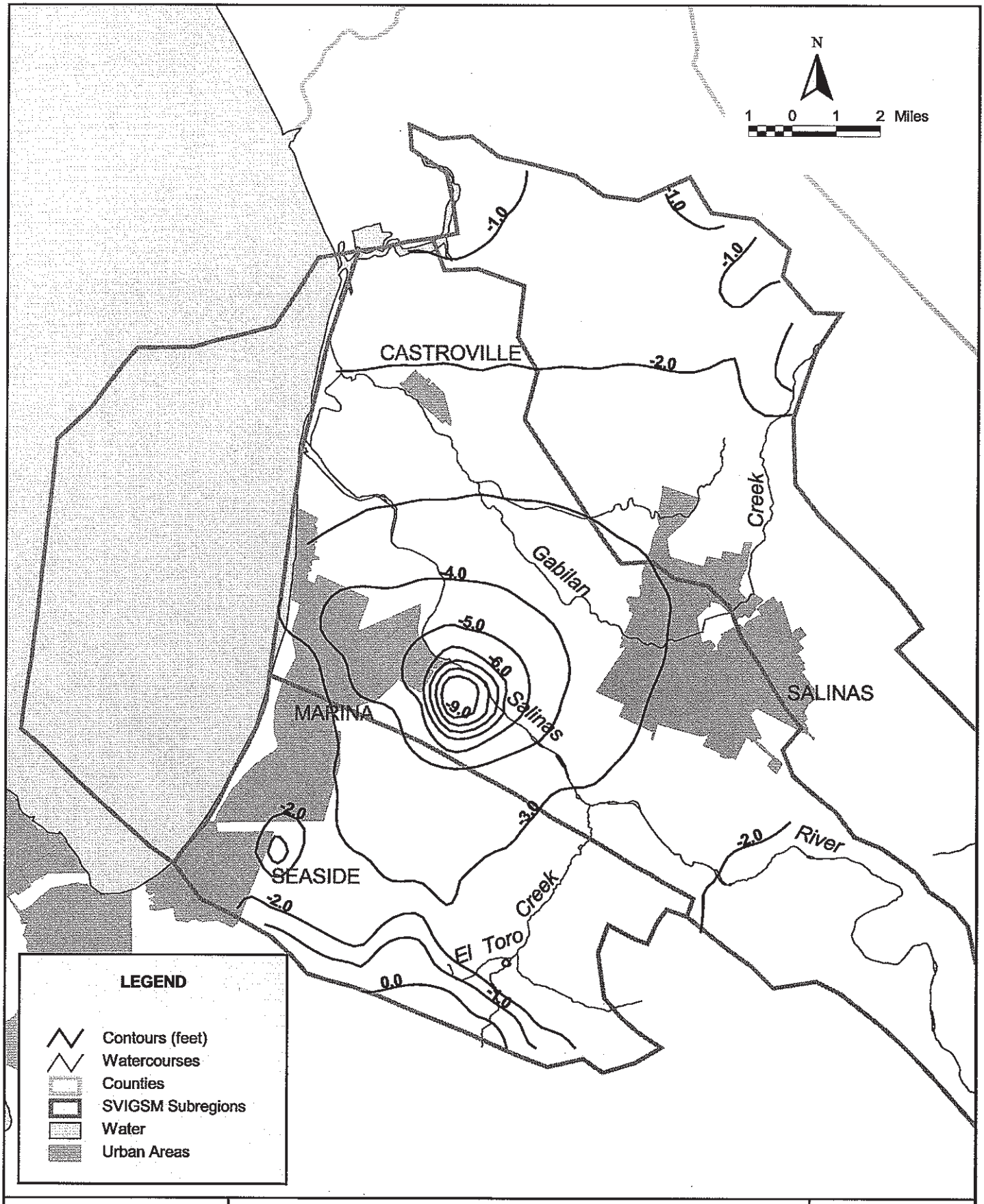
WRIME Water Resources & Information Management Engineering, Inc.

MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Alternative 2 Groundwater Level Difference for Layer 2, September 1994

MAY 2003

FIGURE 4.14



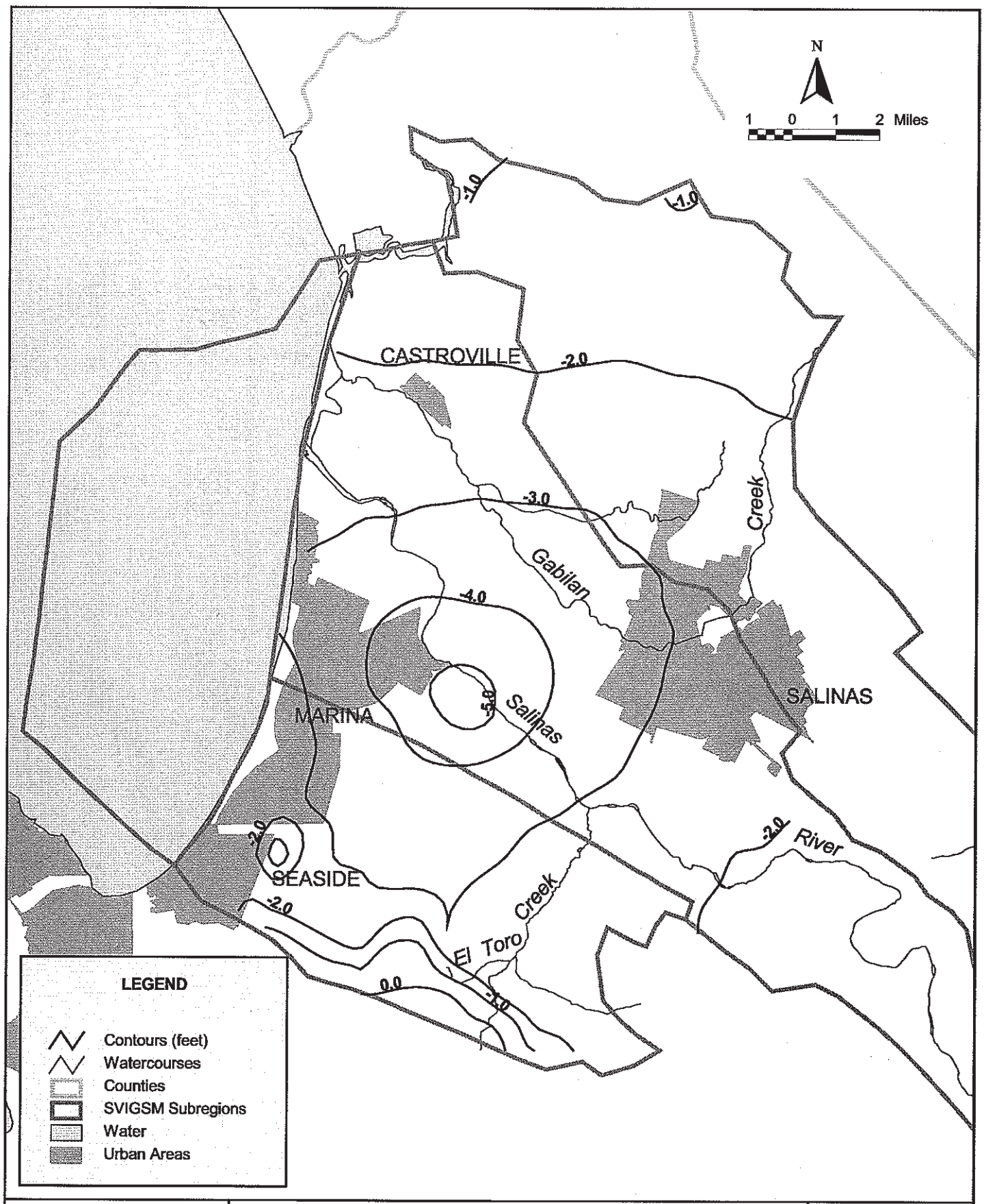
ORIME Water Resources & Information Management Engineering, Inc.

MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Alternative 2 Groundwater Level Difference for Layer 3, September 1994

MAY 2003

FIGURE 4.15



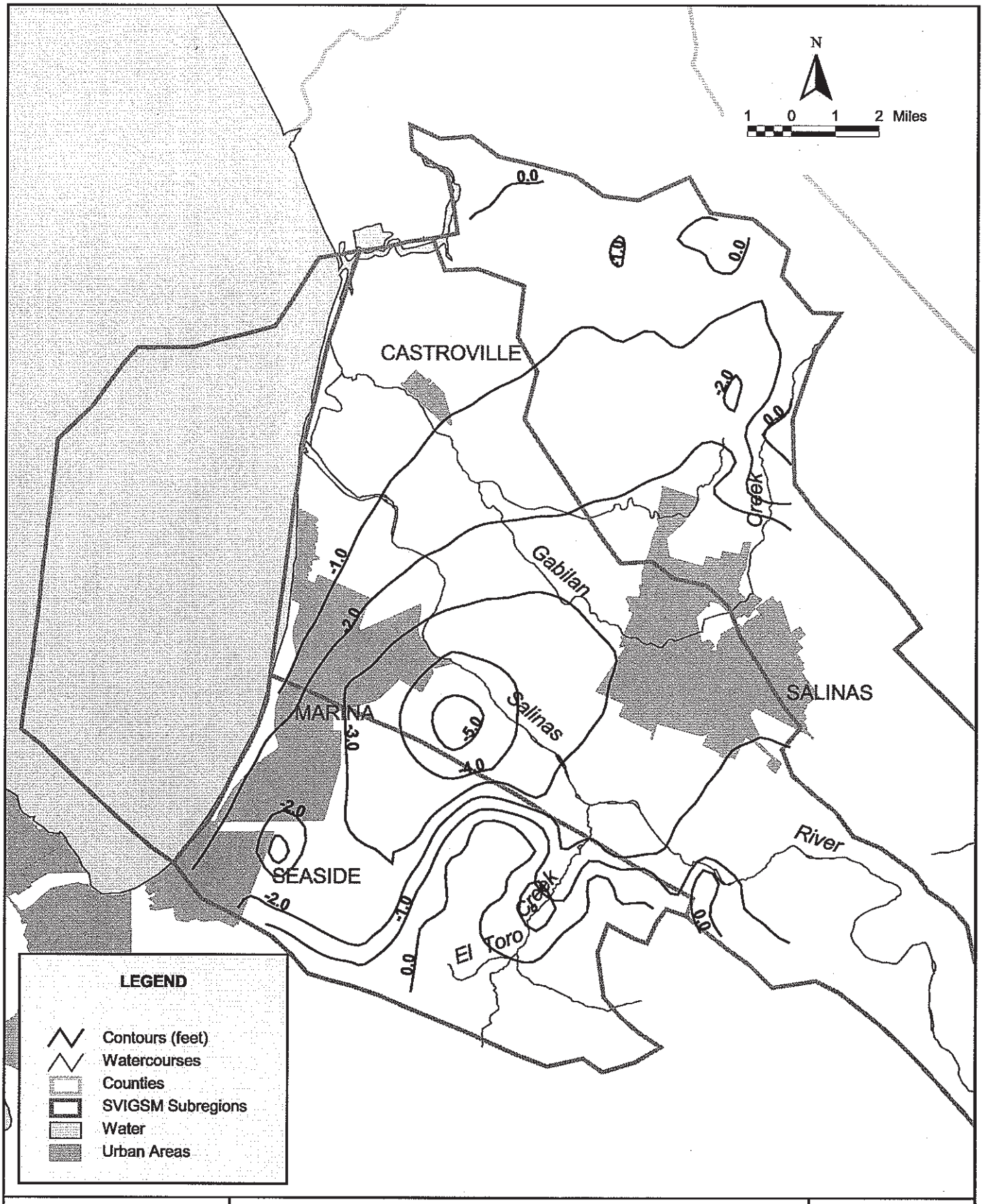
WRIME Water Resources & Information Management Engineering, Inc.

MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

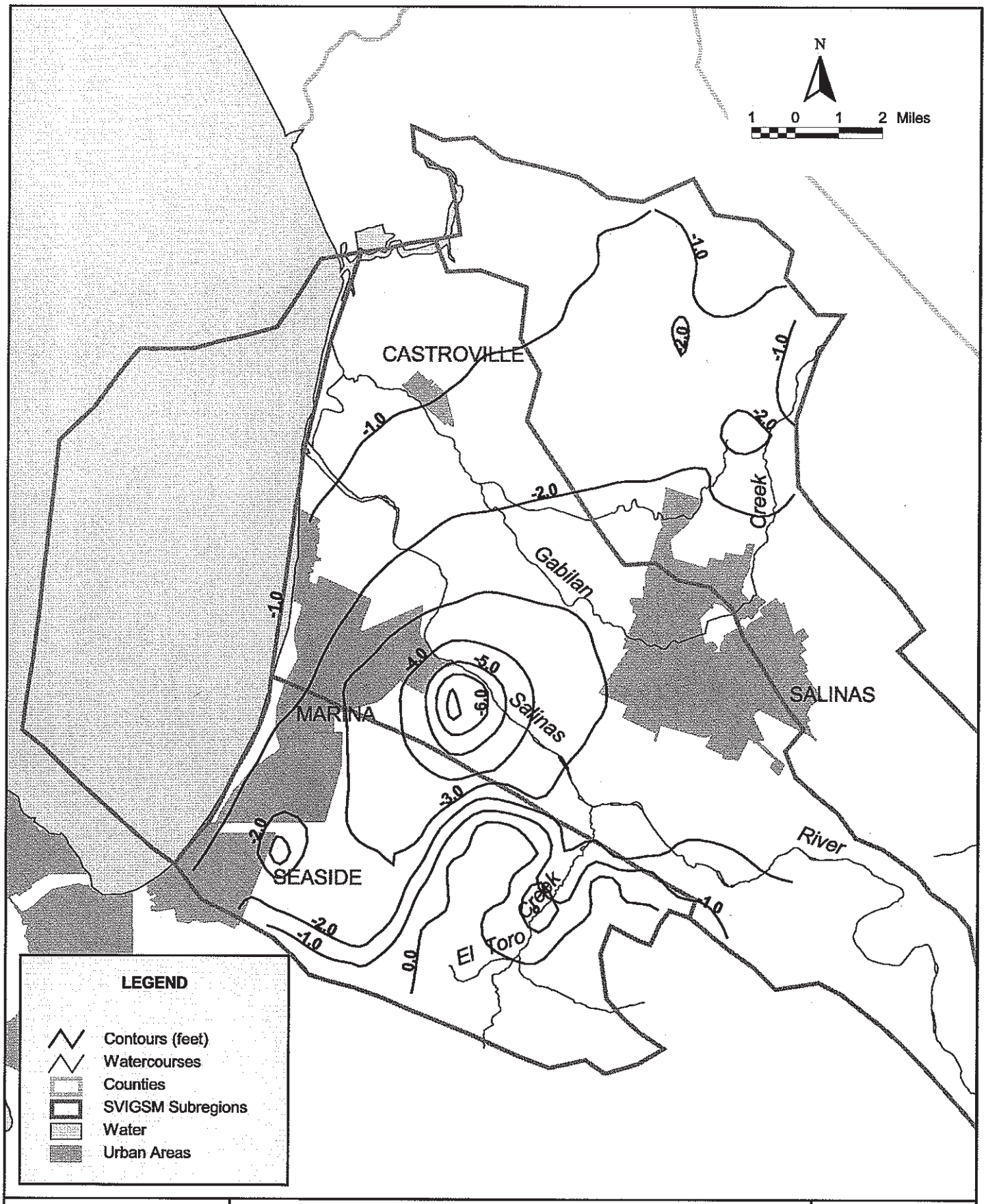
Alternative 2 Groundwater Level Difference for Layer 4, September 1994

MAY 2003

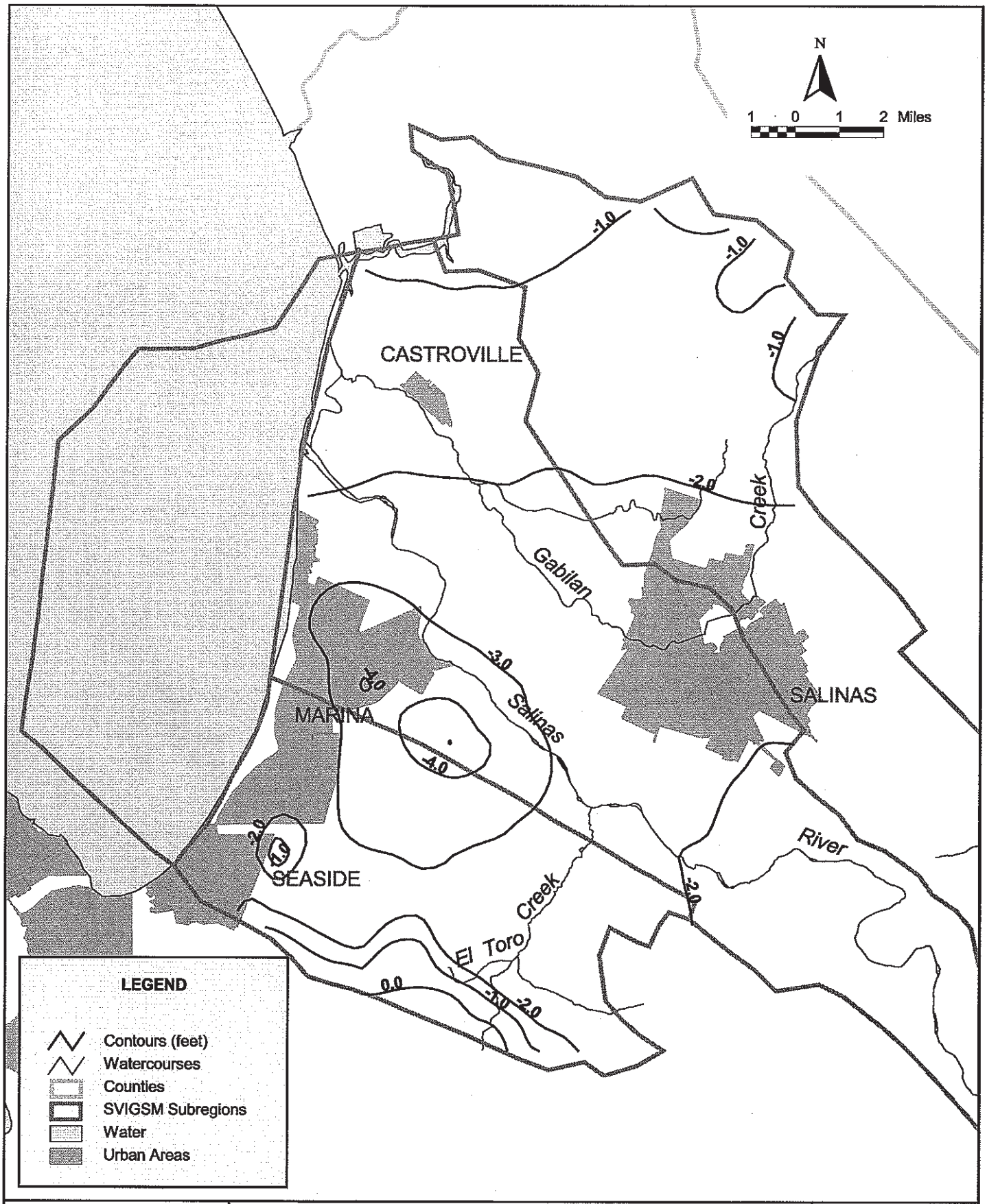
FIGURE 4.16



GRIME Water Resources & Information Management Engineering, Inc.	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Alternative 3 Groundwater Level Difference for Layer 1, September 1994**	MAY 2003 FIGURE 4.17



WRIME Water Resources & Information Management Engineering, Inc.	MARINA COAST WATER DISTRICT DEEP AQUIFER INVESTIGATIVE STUDY **Alternative 3 Groundwater Level Difference for Layer 2, September 1994**	MAY 2003 FIGURE 4.18



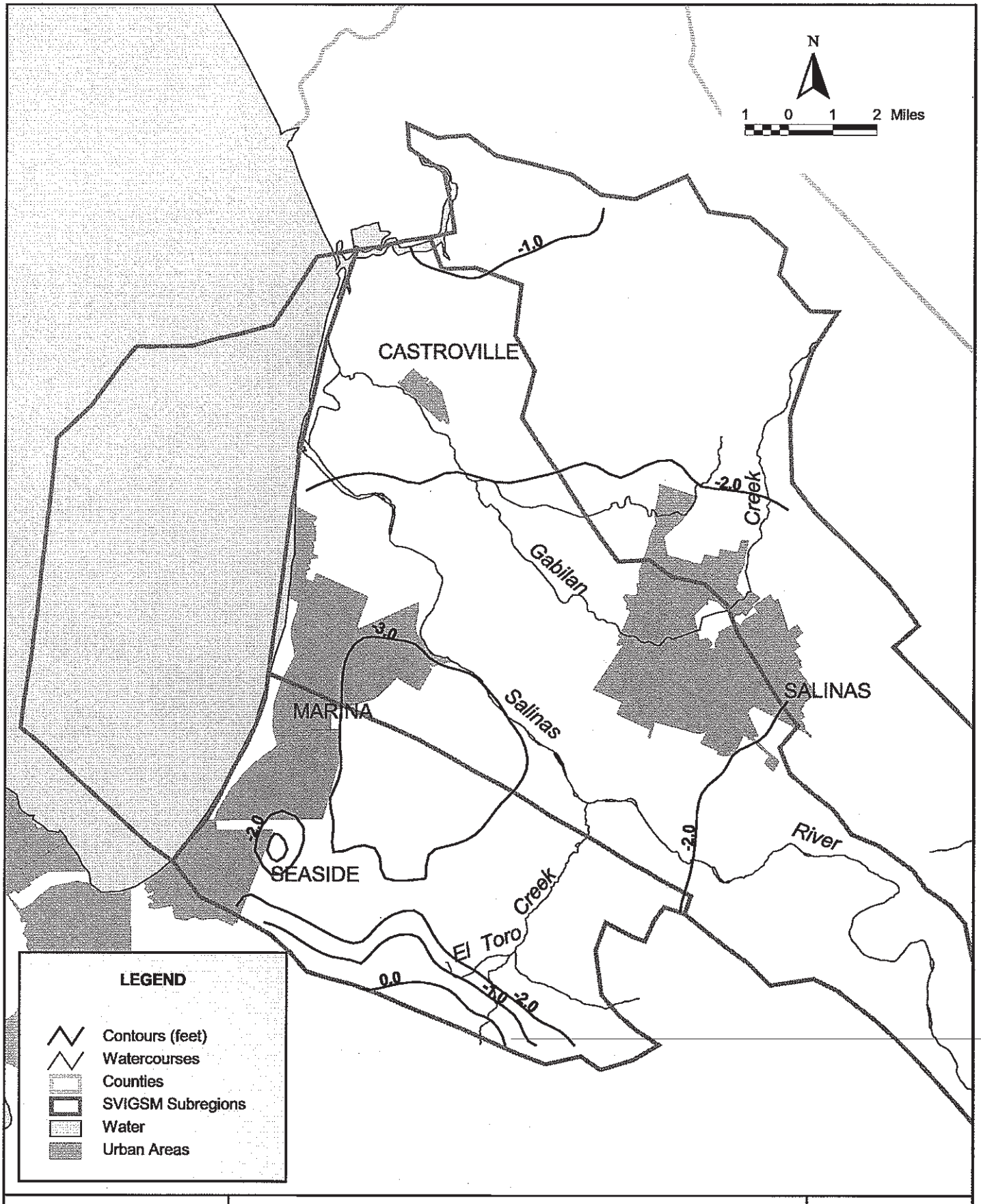
MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Alternative 3 Groundwater Level Difference for Layer 3, September 1994

MAY 2003

FIGURE 4.19

WRIME Water Resources & Information Management Engineering, Inc.



MARINA COAST WATER DISTRICT
DEEP AQUIFER INVESTIGATIVE STUDY

Alternative 3 Groundwater Level Difference for Layer 4, September 1994

MAY 2003

FIGURE 4.20

IRIME Water Resources & Information Management Engineering, Inc.

SECTION 5 SUMMARY OF FINDINGS

The findings of this study can be divided in to three categories:

- Data assessment and analysis,
- Hydrologic modeling and analysis, and
- Water supply reliability.

DATA ASSESSMENT AND ANALYSIS

- Geologic, hydraulic, and geochemical data all suggest the "deep aquifer" to be two distinct aquifers.
- The uppermost aquifer of the "deep aquifer" is comprised of continental deposits assigned to the Paso Robles Formation. The lowermost aquifer is assigned to the marine Purisima Formation.
- MCWD's Well Nos. 10 and 11 produce from the Paso Robles Formation while Well No. 12 produces from the Purisima Formation. The "deep aquifer" wells in the Castroville area are completed in the Paso Robles Formation.
- Water levels in the Marina area deep aquifers have been substantially below mean sea level since the initiation of extractions.
- The areal distribution and stratigraphic location of the Paso Robles and Purisima Formations limit recharge to leakage from overlying aquifers. Water level records from MCWD's wells support this conclusion. Static water level curves from all of the MCWD wells appear to be stabilized, suggestive of equilibrium with recharge.
- Piezometric head in the Purisima Formation is higher than in the overlying Paso Robles Formation. Extractions from Paso Robles may be supported by leakage from both overlying and underlying sediments.
- Although water levels are chronically below mean sea level, there is no evidence of water quality degradation.
- The geologic setting may provide a buffer against seawater intrusion, allowing for the maintenance of water levels below mean sea level. However, storage coefficients suggest that the volume of groundwater in storage in the lower aquifers is small. Increased production would likely come from increased leakage.

- The Purisima Formation is relatively isolated hydraulically from the overlying Paso Robles Formation near the coast.

- As currently configured, the hydrogeologic model incorporated into SVIGSM is not consistent with a two-layer deep aquifer system. Adding a fourth layer and incorporating the current understanding could possibly improve the model.

HYDROLOGIC MODELING AND ANALYSIS

- The SVIGSM was updated to IGSM version 5.0.

- The SVIGSM deep aquifers system is divided into two distinct aquifers, an upper deep aquifer representing the Paso Robles formation, and the lower deep aquifer representing the Purisima formation. The revised SVIGSM, therefore, has four hydrostratigraphic units, among them the 180-foot and the 400-foot aquifer systems.

- The SVIGSM groundwater pumping data in the Marina Coast area is revised to represent the historical groundwater production records of the MCWD at their well sites.

- The SVIGSM is recalibrated so that the aquifer hydraulic conductivities in the deep aquifers, as well as the single aquifer layer in the Upper Valley area, represent an equivalent hydraulic conductivity with similar transmissivity values as in the original SVIGSM 4.18.

- The revised model depicts the observed groundwater levels equal to or better than the original model, and produces water budget estimates similar to the original model.

WATER SUPPLY RELIABILITY

- The updated SVIGSM was used to develop response curves on the sensitivity of groundwater heads and subsurface flows across the coastline to changes in MCWD groundwater pumping.

- The response curves indicate that additional increases in the deep aquifers groundwater pumping in the coastal areas may induce additional reduction in the groundwater heads, and subsequently additional landward subsurface flows across the coastline. The results also indicate that the increase in coastal subsurface flows occurs at a much more rapid pace in the 180-foot aquifer than in the 400-foot aquifer, due to substantially higher transmissivities.

- The results of alternative potential groundwater supply alternatives indicate that the increase in inland groundwater pumping (in the vicinity of Reservation

Road) has a much lesser impact on the groundwater level declines, as well as a lesser effect on the coastal subsurface flows.

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EXHIBIT 7

MARINA COAST WATER DISTRICT
2008 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10				10.7	27.5	28.9	67.1	205.92
11	26.2	30.3	6.8	23.6	24.9	24.8	136.6	419.21
12	4.2	6.2	37.8	4.6	5.7	7.3	65.8	201.93
29	7.3	3.9	8.2	16.3	20.1	17.1	72.9	223.72
30	23.7	18.1	23.2	30.7	22.4	30.2	148.3	455.12
31	20.0	17.8	19.6	29.9	33.6	26.3	147.2	451.74

TOTAL m/gal	81.4	76.3	95.6	115.8	134.2	134.6	637.9
ac / ft	249.81	234.16	293.39	355.38	411.84	413.07	1,957.64

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	23.6	27.9	29.2	25.5	21.8	16.7	144.7	444.07
11	32.4	29.4	24.0	23.5	19.2	20.0	148.5	455.73
12	6.1	6.4	5.6	5.0	5.7	5.9	34.7	106.49
29	17.2	13.8	15.7	14.6	10.6	5.7	77.6	238.15
30	24.1	28.6	26.5	25.0	19.9	19.7	143.8	441.31
31	31.3	26.1	27.5	25.8	21.7	17.1	149.5	458.80

TOTAL m/gal	134.7	132.2	128.5	119.4	98.9	85.1	699
ac / ft	413.38	405.71	394.35	366.43	303.51	261.16	2,144.54

WELL	m/gal	ac / ft	%
10	211.8	649.99	16%
11	285.1	874.94	21%
12	100.5	308.42	8%
29	150.5	461.87	11%
30	292.1	896.42	22%
31	296.7	910.54	22%

2008	TOTAL	m/gal	1,336.7
		ac / ft	4,102.18

MARINA COAST WATER DISTRICT
2009 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	19.9	13.9	28.6	21.7	27.7	25.9	137.7	422.59
11	18.5	15.2	11.7	29.0	30.2	28.0	132.6	406.93
12	6.1	5.6	5.9	6.8	6.1	9.1	39.6	121.53
29	11.3	5.0	6.5	9.9	12.5	14.9	60.1	184.44
30	29.0	20.1	20.7	27.0	27.7	23.3	147.8	453.58
31	25.7	11.5	17.0	19.4	19.4	24.4	117.4	360.29

TOTAL m/gal	110.5	71.3	90.4	113.8	123.6	125.6	635.2
ac / ft	339.11	218.81	277.43	349.24	379.31	385.45	1,949.36

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	27.0	22.8	25.3	23.1	21.0	17.2	136.4	418.60
11	32.9	31.5	24.2	21.5	20.9	19.7	150.7	462.48
12	8.1	6.6	7.2	6.3	7.1	6.9	42.2	129.51
29	15.5	15.9	11.3	10.4	9.1	6.0	68.2	209.30
30	25.4	27.2	27.9	21.8	21.6	18.8	142.7	437.93
31	26.6	24.8	25.0	23.4	20.9	19.6	140.3	430.56

TOTAL m/gal	135.5	128.8	120.9	106.5	100.6	88.2	681
ac / ft	415.83	395.27	371.03	326.84	308.73	270.68	2,088.38

WELL	m/gal	ac / ft	%
10	274.1	841.18	21%
11	283.3	869.42	22%
12	81.8	251.03	6%
29	128.3	393.74	10%
30	290.5	891.51	22%
31	257.7	790.85	20%

2009	TOTAL	m/gal	1,315.7
		ac / ft	4,037.74

MARINA COAST WATER DISTRICT
2010 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	17.4	15.9	16.3	17.4	23.3	24.7	115.0	352.92
11	18.7	13.0	25.1	22.0	29.3	34.7	142.8	438.24
12	4.3	5.8	6.4	6.4	6.7	5.0	34.6	106.18
29	3.3	3.8	3.4	6.0	19.2	25.0	60.7	186.28
30	14.2	15.6	14.4	16.4	28.1	41.2	129.9	398.65
31	16.6	15.0	19.9	21.0	29.6	26.7	128.8	395.27

TOTAL m/gal	74.5	69.1	85.5	89.2	136.2	157.3	611.8
ac / ft	228.63	212.06	262.39	273.74	417.98	482.74	1,877.55

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	22.4	20.4	18.5	18.4	14.5	14.5	108.7	333.59
11	24.8	23.3	25.0	21.8	20.5	17.0	132.4	406.32
12	5.0	6.0	6.7	6.5	5.3	5.2	34.7	106.49
29	28.2	27.3	20.8	20.6	14.1	9.0	120.0	368.27
30	35.9	20.6	41.4	28.5	19.1	11.9	157.4	483.04
31	39.6	49.4	32.1	23.0	20.2	17.4	181.7	557.62

TOTAL m/gal	155.9	147.0	144.5	118.8	93.7	75.0	735
ac / ft	478.44	451.13	443.45	364.58	287.55	230.17	2,255.33

WELL	m/gal	ac / ft	%
10	223.7	686.51	17%
11	275.2	844.56	20%
12	69.3	212.67	5%
29	180.7	554.55	13%
30	287.3	881.69	21%
31	310.5	952.89	23%

2010	TOTAL	m/gal	1,346.7
		ac / ft	4,132.87

MARINA COAST WATER DISTRICT
2011 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	13.7	17.4	13.0	16.1	24.1	19.7	104.0	319.16
11	16.7	23.4	18.8	21.7	18.9	23.7	123.2	378.09
12	4.4	3.4	4.3	4.8	5.9	4.1	26.9	82.55
29	10.5	5.5	10.8	18.9	25.0	18.4	89.1	273.44
30	18.7	13.9	17.8	20.8	39.8	33.4	144.4	443.15
31	17.3	15.1	15.8	30.6	22.5	33.9	135.2	414.91

TOTAL m/gal	81.3	78.7	80.5	112.9	136.2	133.2	622.8
ac / ft	249.50	241.52	247.05	346.48	417.98	408.78	1,911.30

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	24.7	21.0	22.1	22.0	16.0	17.9	123.7	379.62
11	25.8	27.6	29.7	23.9	24.0	27.3	158.3	485.80
12	2.2	4.5	2.3	3.9	3.8	0.6	17.3	53.09
29	25.1	22.8	19.8	12.1	6.1	5.6	91.5	280.80
30	31.1	29.3	37.6	20.7	19.3	10.3	148.3	455.12
31	39.4	33.6	20.8	26.1	11.7	25.1	156.7	480.89

TOTAL m/gal	148.3	138.8	132.3	108.7	80.9	86.8	695.8
ac / ft	455.12	425.96	406.01	333.59	248.27	266.38	2,135.33

WELL	m/gal	ac / ft	%
10	227.7	698.79	17%
11	281.5	863.89	21%
12	44.2	135.64	3%
29	180.6	554.24	14%
30	292.7	898.26	22%
31	291.9	895.81	22%

2011	TOTAL	m/gal	1,318.6
		ac / ft	4,046.63

MARINA COAST WATER DISTRICT
2012 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	18.8	17.8	18.9	22.3	25.6	25.6	129.0	395.89
11	28.1	25.9	27.4	22.8	32.7	28.2	165.1	506.67
12	0.8	0.2	0.2	0.3	0.4	0.1	2.0	6.05
29	8.3	7.1	7.7	10.5	18.7	19.4	71.7	220.04
30	19.6	17.4	23.8	25.0	35.3	35.3	156.4	479.97
31	21.5	19.0	15.9	17.6	25.9	30.9	130.8	401.41

TOTAL m/gal	97.1	87.4	93.9	98.5	138.6	139.5	655.0
ac / ft	297.99	268.22	288.08	302.29	425.35	428.11	2,010.03

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	29.8	28.1	25.8	25.0	26.3	27.0	162.0	497.16
11	31.2	32.6	29.1	27.1	11.0	-	131.0	402.02
12	1.2	0.2	0.3	0.3	-	-	2.0	6.11
29	23.8	21.4	16.9	16.7	15.8	12.5	107.1	328.68
30	32.2	-	-		-	-	32.2	98.82
31	29.9	55.7	58.9	55.4	38.2	27.4	265.5	814.79
34						4.8	4.8	14.73
WG						0.4	0.4	1.28

TOTAL m/gal	148.1	138.0	131.0	124.5	91.3	72.1	705.0
ac / ft	454.50	423.48	402.02	382.08	280.19	221.32	2,163.58

WELL	m/gal	ac / ft	%
10	291.0	893.05	21.4%
11	296.1	908.70	21.8%
12	4.0	12.15	0.3%
29	178.8	548.72	13.1%
30	188.6	578.79	13.9%
31	396.3	1,216.20	29.1%
34	4.8	14.73	0.1%
WG	0.4	1.23	0.0%

2012	TOTAL	m/gal	1,360.0
		ac / ft	4,173.56

MARINA COAST WATER DISTRICT
2013 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	30.5	24.6	24.7	32.9	38.4	20.3	171.4	526.01
11	-	-	-	-	-	-	-	-
12	1.3	0.2	0.2	0.7	0.3	0.5	3.2	9.94
29	11.1	19.2	23.1	27.7	33.5	37.5	152.1	466.78
30	-	-	-	-	-	-	-	-
31	31.3	29.5	25.8	11.6	11.9	23.2	133.3	409.08
34	3.5	6.1	5.2	1.7	0.9	15.8	33.2	101.89
WG	1.5	11.3	28.3	51.6	62.1	42.2	197.0	604.57

TOTAL m/gal	79.2	90.9	107.3	126.2	147.1	139.5	690.2
ac / ft	243.06	279.08	329.29	387.29	451.43	428.11	2,118.27

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	22.6	31.5	29.2	0.2	8.4	7.3	99.2	304.39
11	21.3	20.3	31.1	51.8	34.0	43.7	202.2	620.53
12	0.5	0.3	0.3	0.3	0.4	0.3	2.1	6.44
29	22.1	20.0	6.7	8.7	7.6	1.6	66.7	204.69
30	-	-	-	-	-		-	-
31	29.0	6.9	14.3	18.2	10.3	29.0	107.7	330.52
34	35.8	30.1	27.7	19.9	22.2	8.3	144.0	441.92
WG	10.2	33.8	27.7	30.0	24.7	5.4	131.8	404.48

TOTAL m/gal	141.5	143.0	137.0	129.1	107.6	95.6	753.7
ac / ft	434.25	438.85	420.44	396.27	330.21	293.26	2,312.98

WELL	m/gal	ac / ft	%
10	270.6	830.40	18.7%
11	202.2	620.53	14.0%
12	5.3	16.39	0.4%
29	218.8	671.47	15.2%
30	-	-	0.0%
31	241.0	739.60	16.7%
34	177.2	543.81	12.3%
WG	328.8	1,009.05	22.8%

2013	TOTAL	m/gal	1,443.9
		ac / ft	4,431.25

MARINA COAST WATER DISTRICT
2014 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	23.2	14.2	18.5	16.4	22.7	25.0	120.0	368.27
11	26.1	26.7	27.1	25.5	27.2	17.5	150.1	460.64
12	0.2	0.2	0.2	0.4	0.1	0.2	1.3	3.99
29	1.5	3.4	6.1	10.0	19.0	18.0	58.0	178.00
30	-						-	-
31	11.6	4.1	5.8	8.5	12.6	17.7	60.3	185.05
34	25.1	8.3	15.8	22.3	29.7	27.4	128.6	394.66
WG	18.9	19.4	21.0	25.5	27.5	28.0	140.3	430.56

TOTAL m/gal	106.6	76.3	94.5	108.6	138.8	133.8	658.6
ac / ft	327.14	234.16	290.01	333.28	425.96	410.62	2,021.17

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	19.8	20.7	22.1	21.5	16.8	12.7	113.6	348.63
11	21.6	27.0	24.7	22.5	21.4	24.0	141.2	433.33
12	0.2	0.2	0.3	0.2	0.2	0.2	1.3	3.84
29	14.4	14.4	14.2	14.6	3.6	8.0	69.2	212.37
30							-	-
31	23.3	16.9	11.1	9.6	10.7	2.0	73.6	225.87
34	26.8	21.9	22.3	23.5	13.4	7.8	115.7	355.07
WG	32.9	33.4	24.3	21.3	14.1	12.7	138.7	425.65

TOTAL m/gal	139.0	134.5	119.0	113.2	80.2	67.4	653.3
ac / ft	426.58	412.77	365.20	347.40	246.12	206.69	2,004.75

WELL	m/gal	ac / ft	%
10	233.6	716.89	17.8%
11	291.3	893.97	22.2%
12	2.6	7.83	0.2%
29	127.2	390.36	9.7%
30	-	-	0.0%
31	133.9	410.92	10.2%
34	244.3	749.73	18.6%
WG	279.0	856.22	21.3%

2014	TOTAL	m/gal	1,311.9
		ac / ft	4,025.92

MARINA COAST WATER DISTRICT
2015 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	21.3	16.2	12.9	16.2	14.3	16.6	97.5	299.22
11	13.7	17.3	25.2	21.2	28.4	22.7	128.5	394.35
12	0.2	0.1	0.2	0.2	0.2	0.2	1.1	3.50
29	6.9	5.2	7.3	6.0	0.3	1.0	26.7	81.94
30							-	-
31	8.2	11.2	12.6	15.7	14.5	15.3	77.5	237.84
34	11.6	13.3	17.2	16.1	15.0	20.3	93.5	286.94
WG	18.8	15.3	19.8	23.7	18.2	12.7	108.5	332.97

TOTAL m/gal	80.7	78.6	95.2	99.1	90.9	88.8	533.3
ac / ft	247.66	241.34	292.16	304.13	278.96	272.52	1,636.76

3

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	14.8	16.3	14.5	15.5	15.2	3.4	79.7	244.59
11	23.9	22.4	28.8	21.9	20.0	37.6	154.6	474.45
12	0.5	0.1	0.2	0.2	0.1	0.1	1.2	3.59
29	0.2	0.1	8.8	8.1	5.8	2.3	25.3	77.49
30							-	-
31	22.6	22.3	6.8	9.8	6.4	4.8	72.7	223.11
34	16.9	17.7	13.8	14.1	11.3	11.9	85.7	263.00
WG	18.6	17.8	20.4	19.3	12.2	11.1	99.4	305.05

TOTAL m/gal	97.5	96.7	93.3	88.9	71.0	71.2	518.5
ac / ft	299.06	296.76	286.33	272.82	217.89	218.41	1,591.28

WELL	m/gal	ac / ft	%
10	177.2	543.81	16.8%
11	283.1	868.80	26.9%
12	2.3	7.09	0.2%
29	52.0	159.43	4.9%
30	-	-	0.0%
31	150.2	460.95	14.3%
34	179.2	549.94	17.0%
WG	207.9	638.02	19.8%

2015	TOTAL	m/gal	1,051.9
		ac / ft	3,228.04

MARINA COAST WATER DISTRICT
2016 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	-		20.0	15.9	14.0	13.9	63.8	195.80
11	42.8	32.2	3.5	18.4	19.7	16.5	133.1	408.47
12	0.1						0.1	0.31
29	1.0	3.9	8.9	8.2	7.4	9.2	38.6	118.46
30	-						-	-
31	2.4	4.9	5.5	8.1	11.7	12.9	45.5	139.63
34	7.5	10.4	19.6	15.6	16.3	16.3	85.7	263.00
WG	15.4	17.0	11.7	15.1	17.5	21.3	98.0	300.75

TOTAL m/gal	69.2	68.4	69.2	81.3	86.6	90.1	464.8
ac / ft	212.37	209.91	212.37	249.50	265.77	276.51	1,426.42

2

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	11.0	18.5	16.7	17.8	27.5	37.8	129.3	396.81
11	27.3	15.6	19.0	23.5	12.8		98.2	301.36
12							-	-
29	8.1	5.5	7.8	0.1	0.1	0.1	21.7	66.59
30			0.8	12.7	5.6	4.6	23.7	72.73
31	11.6	18.7	15.3	3.2	7.8	4.9	61.5	188.74
34	13.5	18.8	18.3	15.4	10.3	9.9	86.2	264.54
WG	21.1	16.1	16.1	16.1	18.8	12.1	100.3	307.81

TOTAL m/gal	92.6	93.2	94.0	88.8	82.9	69.4	520.9
ac / ft	284.18	286.02	288.48	272.52	254.41	212.98	1,598.58

WELL	m/gal	ac / ft	%
10	193.1	592.60	19.6%
11	231.3	709.83	23.5%
12	0.1	0.31	0.0%
29	60.3	185.05	6.1%
30	23.7	72.73	2.4%
31	107.0	328.37	10.9%
34	171.9	527.54	17.4%
WG	198.3	608.56	20.1%

2016	TOTAL	m/gal	985.7
		ac / ft	3,025.00

MARINA COAST WATER DISTRICT
2017 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	23.2	17.5	17.4	19.3	21.3	22.8	121.5	372.87
11	17.4	20.6	25.1	25.9	17.3	28.7	135.0	414.30
12							-	-
29	5.4	7.0	4.1	0.9	9.6	0.4	27.4	84.09
30	10.9	11.8	8.6	1.9	10.0	8.6	51.8	158.97
31	5.6	4.5	5.6	3.6	7.0	9.7	36.0	110.48
34	0.9	0.1	5.0	12.6	14.7	14.9	48.2	147.92
WG	4.0	0.9	5.9	11.9	14.9	12.0	49.6	152.22

TOTAL m/gal	67.4	62.4	71.7	76.1	94.8	97.1	469.5
ac / ft	206.84	191.50	220.04	233.54	290.93	297.99	1,440.84

2

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	24.1	24.6	22.1	14.4	6.4	21.8	113.4	348.01
11	27.7	12.9	21.5	39.0	26.3	19.9	147.3	452.05
12							-	-
29	3.6	8.9	4.8	7.9	0.5	0.7	26.4	81.02
30	8.3	14.5	13.1	12.4	16.9	14.8	80.0	245.51
31	5.6	19.2	14.4	15.7	10.1	6.5	71.5	219.43
34	16.5	11.1	22.0	20.3	22.9	19.3	112.1	344.02
WG	16.1	12.4	6.6	-			35.1	107.72

TOTAL m/gal	101.9	103.6	104.5	109.7	83.1	83.0	585.8
ac / ft	312.72	317.94	320.70	336.66	255.02	254.72	1,797.75

WELL	m/gal	ac / ft	%
10	234.9	720.88	22.3%
11	282.3	866.35	26.8%
12	-	-	0.0%
29	53.8	165.11	5.1%
30	131.8	404.48	12.5%
31	107.5	329.91	10.2%
34	160.3	491.94	15.2%
WG	84.7	259.93	8.0%

2017	TOTAL	m/gal	1,055.3
		ac / ft	3,238.60

MARINA COAST WATER DISTRICT
2018 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	19.8	18.6	18.0	20.7	23.4	21.4	121.9	374.10
11	21.9	21.7	22.1	26.5	30.5	30.3	153.0	469.54
12							-	-
29	1.8	1.0	5.2	10.8	8.8	6.4	34.0	104.34
30	8.1	7.6	3.8	9.8	9.2	12.6	51.1	156.82
31	10.3	12.9	16.8	0.6	14.7	16.5	71.8	220.35
34	16.2	15.8	3.3	17.5	13.3	16.2	82.3	252.57
WG			10.3				10.3	31.61

TOTAL m/gal	78.1	77.6	79.5	85.9	99.9	103.4	524.4
ac / ft	239.68	238.15	243.98	263.62	306.58	317.32	1,609.32

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10	25.4	23.5	22.7	14.8	22.3	20.1	128.8	395.27
11	28.0	31.6	31.1	28.4	27.0	18.4	164.5	504.83
12							-	-
29	12.0	8.2	10.9	5.2	2.9	2.7	41.9	128.59
30	12.7	13.0	8.4	12.5	10.9	7.8	65.3	200.40
31	16.6	16.6	12.1	16.7	14.3	17.3	93.6	287.25
34	13.2	14.4	15.6	24.2	11.0	12.6	91.0	279.27
WG							-	-

TOTAL m/gal	107.9	107.3	100.8	101.8	88.4	78.9	585.1
ac / ft	331.13	329.29	309.34	312.41	271.29	242.14	1,795.61

WELL	m/gal	ac / ft	%
10	250.7	769.37	22.6%
11	317.5	974.37	28.6%
12	-	-	0.0%
29	75.9	232.93	6.8%
30	116.4	357.22	10.5%
31	165.4	507.59	14.9%
34	173.3	531.84	15.6%
WG	10.3	31.61	0.9%

2018	TOTAL	m/gal	1,109.5
		ac / ft	3,404.93

MARINA COAST WATER DISTRICT
2019 WELL PRODUCTION SUMMARY

WELLS	JAN	FEB	MAR	APR	MAY	JUN	TOTAL m/gal	ac / ft
10	17.9	17.4	21.3				56.6	173.70
11	23.8	22.1	19.7				65.6	201.32
12							-	-
29	3.5	3.4	3.8				10.7	32.84
30	3.5	2.7	4.5				10.7	32.84
31	14.7	8.3	8.6				31.6	96.98
34	4.3	10.8	13.0				28.1	86.24
WG							-	-

TOTAL m/gal	67.7	64.7	70.9	-	-	-	203.3
ac / ft	207.76	198.56	217.58	-	-	-	623.90

WELLS	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL m/gal	ac / ft
10							-	-
11							-	-
12							-	-
29							-	-
30							-	-
31							-	-
34							-	-
WG							-	-

TOTAL m/gal	-	-	-	-	-	-	-
ac / ft	-	-	-	-	-	-	-

WELL	m/gal	ac / ft	%
10	56.6	173.70	27.8%
11	65.6	201.32	32.3%
12	-	-	0.0%
29	10.7	32.84	5.3%
30	10.7	32.84	5.3%
31	31.6	96.98	15.5%
34	28.1	86.24	13.8%
WG	-	-	0.0%

2019	TOTAL	m/gal	203.3
		ac / ft	623.90

EXHIBIT 8

Technical Memorandum October 8, 2016

To: John H. Farrow, M.R. Wolfe Associates, P.C., Attorneys-at-Law

From: Timothy K. Parker, PG, CEG, CHG, Parker Groundwater

Subject: Technical Review of Draft Subsequent Environmental Impact Report for the Monterey Downs and Monterey Horse Park and Central Coast Veterans Cemetery Specific Plan (DSEIR) and the Final Subsequent Environmental Impact Report for the Monterey Downs and Monterey Horse Park and Central Coast Veterans Cemetery Specific Plan (DSEIR)

At your request, I have reviewed the Draft Subsequent Environmental Impact Report for the Monterey Downs and Monterey Horse Park and Central Coast Veterans Cemetery and the Final Subsequent Environmental Impact Report for the Monterey Downs and Monterey Horse Park and Central Coast Veterans Cemetery Specific Plan (FSEIR) together with the documents cited in the discussion below. My conclusions are set out below.

I am a California Professional Geologist (License #5584), Certified Engineering Geologist (License # EG 1926), and Certified Hydrogeologist (License #HG 12), with over 25 years of geologic and hydrologic professional experience. I serve as a member of the Technical Advisory Committee to the Monterey County Water Resources Agency in connection with its ongoing study of the Salinas Valley Groundwater Basin that is mandated by Policy PS 3.1 of the 2010 Monterey County General Plan. The purpose of that study is to evaluate historic data and trends in seawater intrusion and groundwater levels in the Salinas Valley Groundwater Basin, to evaluate the likely future groundwater demand, to determine whether groundwater level declines and seawater intrusion are likely to continue through 2030, and to make recommendations for action. This study has not been concluded, but a preliminary report was released in January 2015 by the prime consultant for the PS-3.1 study.[1] My Resume and Project Experience are attached.

A. Cumulative pumping in the Salinas Valley Groundwater Basin (SVGB) and its Pressure Subarea has resulted in aquifer depletion and associated seawater intrusion, and current groundwater management efforts are not sufficient to avoid this significant cumulative impact.

1. Overdraft and seawater intrusion in the Salinas Valley Groundwater Basin

The project will obtain its water supply from wells in the 180/400-Foot Aquifer Subbasin ("180/400-Foot Aquifer" or "Pressure Subarea") at the northwest end of the Salinas Valley

[1] MCWRA, State of the Salinas River Groundwater Basin, January, 2015, available at http://www.mcwra.co.monterey.ca.us/hydrogeologic_reports/documents/State_of_the_SRGBasin_Jan16_2015.pdf.

Groundwater Basin. DSEIR p. 4.19-2 to 4.19-3. The Pressure Subarea is one of the eight subbasins making up the Salinas Valley Groundwater Basin (SVGB).[2] Overdraft in the Pressure Subarea has averaged about 2,000 acre-fee per year ("afy") from 1944 to 2014, and the Basin as a whole is "currently out of hydrologic balance by approximately 17,000 to 24,000 afy."[3] Pumping from the Basin has exceeded recharge since the 1930s, causing seawater intrusion as inland groundwater elevations dropped below sea level, permitting the hydraulically connected seawater to flow inland.[4] Seawater intrusion has advanced more than 5 miles inland, rendering significant groundwater unusable for irrigation or domestic uses.[5]

The rate of seawater intrusion is variable, increasing and decreasing with changes in precipitation, but the long-term trend has been a progressive advance in both the 180-foot and 400-foot aquifers.[6] The current prognosis for the Pressure Subarea is for further seawater intrusion due to continued groundwater elevations below sea-level including the latent effects of the recent drought:

> The fact that groundwater elevations are well below the documented protective elevations indicates that the P-180 Aquifer continues to be susceptible to seawater intrusion, and it is unlikely that this situation will be reversed in the coming years, particularly if the current drought conditions continue. Based on the observed time lag (latency) between the end of the historic drought (WY 1991) and the end of the resulting chloride concentration increase (around 1999), one can predict that the 2013 chloride levels reported for coastal wells could show upward concentration trends over the coming years as the SWI front advances, even if wetter climate conditions return. The study area has had three straight years of severe drought

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2 MCWRA, Protective Elevations to Control Seawater Intrusion in the Salinas Valley ("Protective Elevations"), 2013, p. 2, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_II/documents/ProtectiveElevationsTechnicalMemorandum.pdf; MCWRA, State of the Salinas River Groundwater Basin, 2015, Section 3.

3 MCWRA, State of the Salinas River Groundwater Basin, pp. 6-3.

4 MCWRA, Protective Elevations, pp. 4—5; MCWRA, State of the Basin, pp. 2-4, 5-2; MCWRA, Salinas Valley Water Project Draft EIR ("SVWP DEIR"), 2001, pp. 1-2 to 1-8, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_I/documents/DEIR_EIS_2001/2001%20SVWP_DEIR_2001.pdf.

5 MCWRA, State of the Salinas River Groundwater Basin, pp. 5-2 to 5-6; *see also* California Department of Water Resources, Bulletin 118, Salinas Valley Groundwater Basin, 180/400 Foot Aquifer Subbasin, available at http://www.water.ca.gov/groundwater/bulletin118/basindescriptions/3-04.01.pdf.

6 MCWRA, State of the Salinas River Groundwater Basin, pp. 5-2 to 5-9.

> conditions, and continued drought conditions are projected to cause substantial declines in both groundwater head (Section 3.4) and storage (Section 4.4).[7]

The California Department of Water Resources (DWR) is required by the Sustainable Groundwater Management Act to designate as "critically overdrafted" those groundwater basins for which "continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts."[8] DWR identified the 180/400-Foot Aquifer of the Salinas Valley Groundwater Basin as critically overdrafted in January 2016.[9]

2. Efforts to control seawater intrusion

The Monterey County Water Resources Agency ("MCWRA") and predecessor agencies have implemented several projects to address seawater intrusion by storing surface water, increasing recharge, and reducing groundwater pumping along the coast.[10] These include the Nacimiento and San Antonio Reservoirs, water recycling to support the Castroville Seawater Intrusion Project, and the Salinas Valley Water Project (SVWP). The SVWP is the most recent of these projects, completed in 2010.

The EIR for the SVWP explains that seawater intrusion is determined by the amount and location of pumping, and varies in response to annual patterns of precipitation. Because coastal pumping causes greater intrusion impacts, the most effective mitigation for seawater intrusion is a reduction of pumping in coastal areas.[11] However, total pumping in the hydraulically connected SVGB also matters:

> [P]umping in the coastal area closest to the seawater intrusion front has a greater influence on seawater intrusion than pumping in a valley area more distant from the front. Nevertheless, pumping in each area affects seawater intrusion because each subarea draws water from the same Basin.[12]

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7 MCWRA, State of the Salinas River Groundwater Basin, pp. 5-7 to 5-8, see Tables 3-2 and 4-6 in Sections 3.4 and 4.4.

8 DWR, Critically Overdrafted Basins, available at http://www.water.ca.gov/groundwater/sgm/cod.cfm.

9 DWR, Critically Overdrafted Basins (1/2016), available at http://www.water.ca.gov/groundwater/sgm/pdfs/COD_BasinsTable.pdf.

10 Marina Coast Water District (MCWD), Urban Water Management Plan (UWMP), 2010, pp. 30-31.

11 MCWRA, SVWP Final EIR, p. 2-36, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_I/documents/Final%20EIR-EIS%20SVWP_RTC-Vol%201.pdf.

12 MCWRA, SVWP Final EIR, p. 2-35 to 2-36 (emphasis in original).

The 2002 SVWP EIR predicted that the SVWP could halt seawater based on the amount and location of 1995 demand.[13] However, it could not assure that the SVWP would halt seawater intrusion in 2030, even though total demand was estimated to decline, because of projected urban growth and associated higher demand in the northern end of the Basin, e.g., the Fort Ord area.[14]

> As noted in Section 3.2.4, overall water demand in the Basin is anticipated to decline by 2030, but total urban needs are projected to increase from 45,000 acre-feet per year (AFY) in 1995 to 85,000 AFY (a 90% increase) based on projected growth, a large part of which is expected to occur in the northern end of the valley. The modeling shows that with projected 2030 demands, seawater intrusion with implementation of the proposed project may total 2,200 acre-feet per year (AFY) (10,500 AFY of intrusion is anticipated to occur without the project). For this reason, the Draft EIR/EIS reports that the SVWP may not halt seawater intrusion in the long term.[15]

The SVWP EIR also cautioned that "any additional water needs within an intruded groundwater basin would exacerbate seawater intrusion."[16]

3. Seawater intrusion will not be controlled by current management efforts because demand has exceeded projections.

Attachment 1 presents a discussion of the SVWP modeling assumptions compared to subsequent conditions and a discussion of MCWRA's current acknowledgement and scientific documentation that the existing groundwater management projects are not sufficient to halt seawater intrusion in the SVGB. Attachment 1 demonstrates that:

- The SVWP EIR assumed that Basin groundwater pumping would decline substantially from 1995 to 2030, from 463,000 afy to 443,000 afy, based on large expected reductions in agricultural pumping, which dominates Basin water demand. However, groundwater pumping in the 20 years since 1995 substantially exceeded 1995 levels, averaging well over 500,000 afy.

- Modeling for the SVWP understated the level of post-1995 pumping that has actually occurred and that, in any event, the SVWP EIR only claimed the SVWP would halt seawater intrusion based on 1995 land use.

- The existing groundwater management projects have only been able to slow seawater intrusion. While reports show that the rate of seawater intrusion has

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13 MCWRA, SVWP DEIR, pp. 3-23 to 3-24.

14 Id.

15 MCWRA, SVWP Final EIR, p. 91.

16 MCWRA, SVWP Draft EIR, p. 7-7.

declined since the last drought-induced spike in intrusion during 1997-1999, intrusion continues. Furthermore, a new drought-induced spike, which typically follows a drought after a lag period of some years, is now likely to occur due to the latent effects recent drought.[17]

- Thus, MCWRA has concluded that a new project or projects supplying an additional 48,000 afy of groundwater recharge, over and above that supplied by the SVWP, would be required in order to maintain protective groundwater elevations sufficient to control seawater intrusion.

B. The Monterey Downs SEIR's discussion of water supply impacts focuses on water supply allocation and reliability of pumping systems and assumes that the Salinas Valley Water Project will halt seawater intrusion.

The DSEIR reports that, pursuant to a 1993 agreement annexing the Fort Ord are into Zones 2 and 2A of the Monterey County Water Resources Agency, Marina Coast Water District (MCWD) may withdraw up to 6,600 afy from the SVGB for use in the Ord Community. (DSEIR p. 4.8-9.) The DSEIR reports that the Fort Ord Reuse Authority (FORA) has sub-allocated this 6,600 afy to the member agencies that have local land use jurisdiction in the Ord Community; that those member agencies have in turn allocated some of their sub-allocations to approved development projects; and that Seaside and Monterey County still retain 412.9 afy of their respective sub-allocations that have not yet been committed to approved projects. (DSEIR p. 4.19-2 to 4.19-5.) The DSEIR concludes that this unallocated water would be sufficient to support Phases 1-3 of the project, but that additional water supplies would be required for Phases 4-6. (DEIR p. 4.19-24, 4.8-34.)

The Monterey Downs DSEIR concludes that Phases 1-3 of the project will not have a significant impact on groundwater because (1) those phases "would only use groundwater that is within MCWD's existing 6,600 AFY allocation" and (2) "MCWD's groundwater supply is considered reliable on a quantity and quality basis." (DSEIR p. 4.8-34; see DSEIR p. 4.19-32.) As discussed in the next two sections, neither of these two reasons for concluding the impact is not significant are justified.

The conclusion that "MCWD's groundwater supply is considered reliable on a quantity and quality basis" (DSEIR p. 4.8-34) is taken from the Water Supply Assessment (WSA).[18] The WSA information in taken in turn from the MCWD 2010 Urban Water Management Plan (UWMP).[19] In support of the claim that the water supply is "reliable" the FSEIR also cites studies estimating project water demand and evaluating stormwater runoff and recharge; however these additional documents are concerned with project demand estimates, sewer

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17 MCWRA, State of the Salinas River Groundwater Basin, pp. 5-7 to 5-8.

18 MCWD, Water Supply Assessment and Written Verification of Supply for Monterey Downs Specific Plan, 2012, pp. 22-23.

19 MCWD, Urban Water Management Plan (UWMP), 2010, p. 53.

usage estimates, and stormwater runoff, and do not provide any discussion of groundwater impacts to the SVGB due to increased pumping that is not contained in the WSA and UWMP.[20]

The UWMP's discussion of water supply "reliability" cited by the WSA is expressly based on the claims that the SVWP will in fact eliminate overdrafting and prevent saline contamination and that pumping will respect "long-term safe yields:"

> 5.1 Water Supply Reliability - Single and Multiple Dry Year and Demand Comparison
>
> The Urban Water Management Planning Act requires a description of a water provider's supply reliability and vulnerability to shortage for an average water year, a single dry year or multiple dry years. Such analysis is most clearly relevant to water systems that are supplied by surface water. Since the bulk of MCWD's supply is groundwater and the remainder is from desalinated supply, short- and medium-term hydrologic events over a period of less than five years usually have little bearing on water availability. Groundwater systems tend to have large recharge areas. The Salinas Basin is aided by two large storage reservoirs, Nacimiento and San Antonio, providing about 700,000 ac-ft of storage. These reservoirs regulate surface water inflow to the basin shifting winter flows into spring and summer releases for consumptive use, which also allows for increased basin recharge. The Salinas Valley Water Project is expected to increase the average level of groundwater storage, moving the basin from a situation where average storage is declining to a net increase in storage of about 6,000 ac-ft annually. Provided groundwater is protected from contamination and long-term safe yields in the basin are respected, water is available annually without regard to short-term droughts. This is due to the large storage volume of the basin that can be utilized to offset annual variations in surface runoff. Therefore, MCWD's groundwater supply is fully available in annual average, single dry year and multiple dry years.[21]

The 2010 UWMP discusses previous groundwater management efforts including the Nacimiento and San Antonio reservoirs and the Castroville Seawater Intrusion Project (CSIP).[22] The UWMP then states that the SVWP was developed to "fully eliminate basin

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[20] See e.g., DSEIR pp. 4.8-48 to 4.8-49, FSEIR, pp. 11.4-1623, 11.4-1628 to 11.4-1629, 11.4-1611, 11.4-1569, 11.4-1574, 11.4-1575, 11.4-1585, citing Monterey Horse Park Project Water Demand and Sewage Generation (Horse Park Water Sewer) (Whitson Engineers, August 16, 2012); Water Supply Assessment and Written Verification of Supply for the Monterey Downs Specific Plan (Schaaf & Wheeler Consulting Engineers, November 6, 2012);Water Supply Assessment for the Monterey Downs Specific Plan Update to Table 5-2 (Marina Coast Water District, November 28, 2012); City of Seaside – Monterey Downs WSA Supplement (Diamond West Incorporated, February 21,2014); and Monterey Downs Water and Sewer Demand Study (WSDS) (Diamond West Incorporated, September 24, 2012).

[21] MCWD, 2010 UWMP, p. 53.

[22] MCWD, 2010 UWMP, pp. 30-31.

overdraft and seawater intrusion," and claims that "MCWRA modeling concludes that this component will eliminate basin overdraft and intrusion."[23] The 2010 UWMP reports that the SVWP assumes that there will be a 20,000 afy reduction in SVGB demand by 2030, consistent with the SVWP EIR's modeling assumptions.[24] The 2014 WSA Supplement prepared by Diamond West on behalf of the applicant reports these UWMP claims that the SVWP will reverse the overdraft condition (result in a "net increase in storage of about 6,000 ac-ft annually"), avoid saline contamination, and that SVGB demand is projected to decline 20,000 afy by 2030.[25]

However, the DSEIR, the WSA, and the WSA Supplement all fail to report that the UWMP acknowledges that the seawater intrusion front continues to advance in the vicinity of the Marina and Ord Community, and threatens the wells supplying the Ord Community.[26] They also fail to report that the UWMP states that the SVWP is expected to halt seawater intrusion only based on a 1995 pumping baseline, that "it is uncertain whether this outcome will be borne out at currently expected levels of pumping increases in the coastal margins of the Pressure subarea," and that MCWRA has also documented that the SVWP "may not halt intrusion in the long run and that additional surface water delivers into the coastal region" may be needed.[27] Neither the SEIR, the WSA, or the WSA Supplement discuss MCWRA's current reports and documentation, discussed in Attachment 1, that (1) SVGB demand has exceeded the demand projections used by the SVWP modeling, (2) actual pumping in the SVGB is unsustainable without adverse impacts because it exceeds the long-term safe yield, and (3) additional groundwater management projects, which are neither committed nor funded, are needed to halt seawater intrusion caused by current pumping because the SVWP will not do so.

C. The Monterey Downs SEIR analysis is based on the unfounded assumption that there would be no significant impact as long as total Fort Ord pumping is less than 6,600 afy; however, any additional pumping will further aggravate existing seawater intrusion regardless of whether portions of the 6,600 afy remain unallocated.

As noted, a major premise of the SEIR's conclusion that water supply impacts for Phases 1-3 are not significant is that the project "would only use groundwater that is within MCWD's existing 6,600 AFY allocation." (DSEIR p. 4.8-34.) However, the existence of a water supply

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23 MCWD, 2010 UWMP, p. 31.

24 MCWD, 2010 UWMP, p. 41.

25 Diamond West, WSA Supplement, 2014, p. 13.

26 See MCWD, 2010 UWMP, p. 36.

27 MCWD, 2010 UWMP, p. 42.

entitlement does not imply that there are no impacts from using that water. The relevant question for CEQA impact analysis is whether increased pumping to support the project will cause physical impacts, regardless of any entitlement to use that water. As discussed below, additional pumping in the SVGB, especially in the coastal areas, will in fact aggravate seawater intrusion, but the DSEIR does not acknowledge this as a relevant basis for impact analysis.

The SEIR purports to tier from the Program EIR prepared for the Base Reuse Plan in 1997 (the BRP PEIR). However, the BRP PEIR did not assume that there would be no significant groundwater impacts unless and until Ord Community pumping reaches 6,600 afy. The BRP PEIR analysis of water supply impacts makes it clear that FORA did not necessarily expect that 6,600 afy could be pumped from beneath Fort Ord without causing further seawater intrusion, and its mitigation does not permit the agencies to delay a solution if intrusion persists.

The BRP PEIR impact analysis qualifies any reliance on the 6,600 afy allocation by stating that a potable water supply is "assumed to be assured from well water until a replacement is made available by the MCWRA," but only "provided that such withdrawals do not accelerate the overdraft and seawater intrusion problems in the Salinas Valley groundwater aquifer." (BRP PEIR p. 4-53 (emphasis added)). It states that the 6,600 afy "could" support the first phase of Ord community development through 2015 and then notes "given the existing condition of the groundwater aquifer, there is public concern over the ability of the water wells to 'assure' even the 6,600 afy." (BRP PEIR p. 4-53.) Thus, the BRP EIR evaluates the impacts of the BRP through 2015 in two distinct analyses, one of which assumes that 6,600 afy can be supplied without impacts and the other of which assumes that it cannot. In particular, it provides that "[a]ssuming groundwater wells on former Fort Ord were able to supply 6,600 afy," an additional 7,932 afy of supply would be required by 2015. (BRP PEIR, p. 4-53.) However, it then provides in the alternative that "[i]f groundwater wells were unable to supply the projected 2015 demand of 6,600 afy of water for former Fort Ord land uses, e.g., if pumping caused further seawater intrusion into the Salinas Valley Aquifer," additional supplies would have to be developed sooner, and even further recommends "that an alternate water supply source, such as on-site storage facilities, be considered." (BRP PEIR, p. 4-54.)

The BRP PEIR provides specific policy requirements to ensure adequate, timely mitigation of seawater intrusion, mitigation that may need to be implemented before 6,600 afy is committed or pumped for new development. Policy B-1 requires that the FORA members "shall ensure additional water supply." Policy B-2 requires conditioning project approval on verification of an "assured long-term water supply." Policy C-3 requires the member agencies cooperate with MCWRA and MPWMD "to mitigate further seawater intrusion based on the Salinas Valley Basin Management Plan." Program C-3.1 requires the member agencies to work with the water agencies "to estimate current safe yields within the context of the Salinas Valley Basin Management Plan for those portions of the former Fort Ord overlying the Salinas Valley and Seaside groundwater basins, to determine available water

supplies." MCWRA has now determined that the safe yield of the Pressure Subarea is about 110,000 to 117,000 afy and that existing pumping exceeds this safe yield by about 12,000 to 19,000 afy.[28] Indeed, the BRP PEIR acknowledges that pumping in the 180-foot and 400-foot aquifers had "exceeded safe yield, as indicated by seawater intrusion and water levels below sea level." (BRP PEIR p. 4-63.) The BRP PEIR states that the "conditions of the 900-foot aquifer are uncertain", including the safe yield and whether the aquifer is in overdraft. *Id.*

The BRP PEIR explains that Policies B-1, B-2, and C-3 are intended to "affirm the local jurisdictions' commitment to preventing further harm to the local aquifers . . . by limiting development in accordance with the availability of secure supplies." (BRP PEIR, p. 4-55.) The explicit provisions for determination of safe yield and for acceleration of water supply projects if 6,600 afy cannot be supplied without further seawater intrusion clearly demonstrate the intent that the member agencies not simply defer action until 6,600 afy has been allocated to development projects if seawater intrusion continues. To the contrary, it seems clear that the BRP PEIR directed the member agencies "to mitigate further seawater intrusion" by, among other things, ensuring that groundwater pumping beyond the determined safe yield is not permitted for new development projects. The BRP PEIR's cumulative analysis makes it clear that Policy C-3 does not permit uncritical reliance on a 6,600 afy allocation: "existing water allocations of 6,600 afy . . . would allow for development to proceed to the year 2015, provided that seawater intrusion conditions are not exacerbated (Policy C-3)." (BRP PEIR p. 5-5 (emphasis added).)

In sum, unlike the Monterey Downs DSEIR, the BRP PEIR does not assume that the 6,600 afy entitlement is a sufficient basis to determine whether there will be a significant water supply impact from continued groundwater pumping.

As discussed above, the problem of seawater intrusion continues its march inland, requiring deeper replacement wells as the volume of usable groundwater declines, and has not been solved in the 19 years since the certification of the 1997 BRP PEIR. In fact, since the certification of the 1997 BRP PEIR, seawater intrusion maps and tables demonstrate an advance of over 2 miles in the seawater intrusion front in the 180-foot aquifer in the Fort Ord area and substantial advances elsewhere in both the 180-foot and 400-foot aquifers have occurred.[29] As the UWMP discloses, as wells have become contaminated, it has been necessary to drill new wells farther inland and to increase pumping from the as-yet uncontaminated 900-foot aquifer.[30] And there are no currently committed, funded projects that are expected to solve the problem. As discussed below, the SEIR presents no evidence that pumping from the 900-foot aquifer will avoid aggravation of seawater intrusion, and

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28 MCWRA, State of the Salinas River Groundwater Basin, p. 4-25.

29 MCWRA, State of the Salinas Valley Groundwater Basin, 2015, pp. 5-2 to 5-5.

30 MCWD, 2010 UWMP, pp. 33-37.

there is clear evidence to the contrary. In light of this, the SEIR should disclose that increased pumping to support Phases 1-3 of the project would have a potentially significant impact or could make a considerable contribution to a significant cumulative impact on the groundwater aquifer from which the project would be supplied.

The most recent comprehensive study to the SVGB demonstrates that there is a direct connection between any additional groundwater pumping in the Pressure Subarea and increased seawater intrusion. The 2015 State of the Salinas Valley Groundwater Basin Report indicates that the Pressure Subarea remains in overdraft and that groundwater elevations are well below documented protective elevations.[31] Thus, it concludes that the " P-180 Aquifer continues to be susceptible to seawater intrusion, and it is unlikely that this situation will be reversed in the coming years, particularly if the drought conditions continue."[32] The report also states that "groundwater elevations well below the protective elevations indicate that the P-400 Aquifer continues to be susceptible to SWI, particularly if the current drought conditions continue into the coming years."[33] The report recommends reducing existing pumping in the Pressure Subarea because "the current distribution of groundwater extractions is not sustainable."[34] The report explain that over the period of analysis, from 1953 to 2013, there has been an average loss of storage for the entire SVGB of from 17,000 afy to 24,000 afy.[35] "Seawater intrusion can account for 18,000 afy of the total storage loss of 24,000 afy."[36] In short, each additional acre-foot of pumping in the Pressure Subarea induces an additional 0.75 acre-foot of seawater intrusion.

D. The Monterey Downs SEIR analysis is based on the unfounded assumption that there would be no significant impact as long as supply is "reliable."

As noted above, the other major premise of the SEIR's conclusion that water supply impacts for Phases 1-3 would not be significant is that "MCWD's groundwater supply is considered reliable on a quantity and quality basis." (DSEIR p. 4.8-34.) Here, "reliability" as the term is used in the DSEIR, WSA, and UWMP, does not imply that there would be no significant groundwater impact from using the supply.

First, a UWMP and a WSA are required to address "reliability" of a water supply, by which the law simply requires analysis of whether water will be available during normal, single

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31 MCWRA, State of the Salinas Valley Groundwater Basin, 2015, p. 5-7.

32 MCWRA, State of the Salinas Valley Groundwater Basin, 2015, p. 5-7.

33 MCWRA, State of the Salinas Valley Groundwater Basin, 2015, p. 5-8.

34 MCWRA, State of the Salinas Valley Groundwater Basin, 2015, p. 6-3.

35 MCWRA, State of the Salinas Valley Groundwater Basin, 2015, p. ES-16.

36 MCWRA, State of the Salinas Valley Groundwater Basin, 2015,, p. ES-16.

dry, and multiple dry years.[37] A groundwater water supply may be reliable, in the sense that water would remain available even during a multi-year drought, even though the use of that water causes significant impacts to the aquifer. For example, notwithstanding the ongoing seawater intrusion caused by continuing overdraft conditions, MCWD and other users have thus far been able to move pumping inland and to tap deeper aquifers to secure groundwater supplies. However, the ability to pump from an underground reservoir of stored groundwater that is large enough to smooth out climatic variation simply does not imply that this pumping is without impacts, such as groundwater depletion, mining and further aggravation of seawater intrusion.

Second, the WSA and 2010 UWMP cite the purported efficacy of the SVWP as the basis for claiming that the water supply is "reliable." However, the claims these documents make for the SVWP are overstated, since the SVWP EIR did not indicate that seawater intrusion would be halted with any certainty by 2030, and these documents are now outdated since the MCWRA now has documented that the SVWP will not in fact prevent continuing seawater intrusion. As discussed in Attachment 1, the future demand assumptions made by the SVWP EIR and used for modeling the efficacy of the SVWP projected declining water usage in the SVGB, from 463,000 afy in 1995 to 443,000 afy in 2030. Reported pumping in the 20 years since 1995 has not declined but has in fact averaged 502,161 afy (and adjusted to include an estimate for non-reporting wells in these zones, the average is 529,024 afy). Thus, MCWRA reports document that the SVWP will not halt seawater intrusion. To halt seawater intrusion, the County must reduce coastal pumping by 48,000 afy, which would require securing additional surface water supplies to be used to replace that groundwater pumping in coastal areas.[38]

Third, the WSA cites the fact that the 900-foot aquifer has not yet shown signs of seawater intrusion as evidence of a "reliable" supply.[39] The fact that MCWD has so far been able to relocate wells, deeper or farther inland, to find a water supply not yet subject to intrusion does not mean that increased pumping does not cause additional impacts. Furthermore, as discussed below neither the WSA nor the SEIR provide an adequate discussion of the potential impacts from increased pumping of the 900-foot Aquifer (the Deep Aquifer), which include impacts to the overlying 180-foot and 400-foot aquifers of the Pressure Subarea and impacts to the 900-foot aquifer itself. As discussed below, increased pumping of the 900-foot aquifer may induce increased seawater intrusion into the overlying 180-foot

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[37] Water Code §§ 10631(c) (UWMP must assess reliability for average, single dry, and multiple dry years), 10910(c)(3) (WSA must discuss water availability during normal, single dry, and multiple dry water years); see MCWD, 2010 UWMP p. 53 (reliability discussion); MCWD, WSA, pp. 3, 22-23 (reliability discussion).

[38] MCWRA, Protective Elevations, pp.1, 11.

[39] MCWD, WSA, p. 23.

and 400-foot aquifers, will deplete the 900-foot aquifer itself, and it may in fact result ultimately in seawater intrusion into the 900-foot aquifer.

E. Increased pumping of the 900-foot aquifer will deplete the 900-foot aquifer, may induce additional seawater intrusion, and neither the DSEIR nor FSEIR provide an adequate discussion of this.

LandWatch's Comments PO 208-5 to 208-14 request information about the specific aquifers from which water will be pumped because (1) the DSEIR implies that water can be supplied safely from the 900-foot aquifer even if the 180-foot and 400-foot aquifers are contaminated by seawater, but (2) it also states that there is a hydraulic connection and recharge relation between the 180-foot, 400-foot, and 900-foot aquifers. LandWatch's comments reflect the concern that increased pumping from the 900-foot aquifer could further intrude the 180-foot and 400-foot aquifers and may also intrude the 900-foot aquifer itself. The FSEIR does not supply the requested information and improperly dismisses its relevance because it fails to acknowledge that increased pumping from the 900-foot (Deep) aquifer may induce increased seawater intrusion in the hydraulically connected upper aquifers and fails to discuss risks to the 900-foot aquifer.

1. <u>The FSEIR fails to address LandWatch's comments and requests for information</u>.

LandWatch asked how much is pumped from each of the 180-foot, 400-foot, and 900-foot aquifers under baseline conditions and how much will be pumped in the future. (Comment PO 208-5.) In response the FSEIR states that the DSEIR's analysis is "based on the adopted MCWD 2010 UWMP, and the details concerning aquifer operations do not affect the DSEIR's analyses." (FSEIR, p. 14-4-1022.) However, the UWMP does not provide the requested information regarding existing and projected pumping by aquifer. (Note that Table 4.8-1 in the DSEIR provides pumping <u>capacity</u> by well and by aquifer, but it does not provide baseline or projected pumping <u>volumes</u>. (DSEIR, p. 4.8-10.))

LandWatch asked that the SEIR identify studies cited by the DSEIR, in particular the "recent stratigraphic analyses" that "have indicated" a hydraulic connection between the 180-foot, 400-foot, and 900-foot aquifers. (Comment PO 208-5.) The FSEIR repeated the DSEIR's claim and cited the MCWD 2010 UWMP (FSEIR, p. 11.4-1020), but it did not identify the recent stratigraphic analyses. The MCWD UWMP does not provide stratigraphic analysis. The UWMP does cite WRIME's 2003 "Deep Aquifer Investigative Study," which may possibly be one of the stratigraphic analyses referenced by the DSEIR, although this is unclear because it is not recent.[40] However, as discussed below, WRIME 2003 indicates that increased pumping of the 900-foot aquifer will not be without impacts.

LandWatch asked that the SEIR explain the DSEIR's claims that 1) evidence now shows a hydraulic connection between the 180-foot, 400-foot, and 900-foot aquifers and 2) the 900-

[40] MCWD 2010 UWMP, p. 36.

foot aquifer is a series of aquifers not all of which are hydraulically connected. (PO 208-5.) LandWatch asked whether this implied that only portions of the 900-foot aquifer are connected to and recharged by the 180-foot and 400-foot aquifers. (PO 208-5.) LandWatch asked if there is in fact any recharge other than from the 180-foot and 400-foot aquifers. (PO 208-5.) However, the FSEIR simply repeated the DSEIR's discussion (FSEIR p. 11.4-1020) without addressing these questions.

LandWatch asked if the wells in the 900-foot aquifer that would support the project are in an area of that aquifer that is recharged by the 180-foot and 400-foot aquifers. (PO 208-6.) The FSEIR again simply repeated the DSEIR's claims that 1) evidence now shows a hydraulic connection between the 180-foot, 400-foot, and 900-foot aquifers and 2) the 900-foot aquifer is a series of aquifers not all of which are hydraulically connected and then stated that "it would be speculative to state exactly which aquifer would supply the Project, since they are connected hydraulically." (FSEIR p. 11.4-1022.) As discussed below, a hydraulic connection between the 180-foot, 400-foot, and 900-foot aquifers means that all pumping will continue to aggravate depletion of the upper aquifers and increase seawater intrusion, and where the deeper 900-foot aquifer is isolated it will cause significant depletion of the 900-foot deeper aquifer, which the SEIR fails to disclose.

The DSEIR's statement that portions of the 900-foot aquifer are not hydraulically connected to other portions of the 900-foot aquifer would allow for the possibility that those unconnected portions are also isolated from the 180-foot and 400-foot aquifers, which would be highly relevant to whether pumping those areas would affect seawater intrusion in the 180-foot and 400-foot aquifers. The FSEIR fails to address this possibility. However, as discussed below, even though there are two distinct aquifers of the Deep Aquifer system,[41] increased pumping from the deeper of these two aquifers is not viable due to the lack of yield.[42] Furthermore, evidence from WRIME's 2003 Deep Aquifer Investigative Study indicates that increased pumping from the upper Deep Aquifer will increase the ongoing depletion of the upper aquifers and has the associated potential to increase seawater intrusion.[43]

LandWatch requested that the SEIR explain whether recharge to the 900-foot aquifer from the seawater-intruded 180-foot and 400-foot aquifers could contaminate the 900-foot aquifer, whether increased pumping in the 900-foot aquifer would increase this risk, and how much pumping from the 900-foot aquifer is sustainable. (PO 208-7 through 208-11.) The FSEIR states that "the 900-foot aquifer is not expected to be contaminated by saltwater through recharge from the 180-foot and 400-foot aquifer, as the MCWD wells are outside of the area currently affected by seawater intrusion." (FSEIR p. 11.4-1022 (emphasis added).)

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41 WRIME, Deep Aquifer Investigative Study, 2003, p. 5-1.

42 WRIME, Deep Aquifer Investigative Study, 2003, p. 4-7.

43 WRIME, Deep Aquifer Investigative Study, 2003, pp. 5-1 to 5-2.

The response misses the point that there is a significant potential for future contamination of the 900-foot aquifer as seawater intrusion advances to the areas where there is vertical connectivity between all of the aquifers. The response simply fails to make any assessment of this potential as requested by comments. As discussed above and in the attachment, current studies confirm that the seawater intrusion front does in fact continue to advance due to groundwater pumping in excess of recharge. As discussed immediately below, studies confirm that there is vertical connectivity between the 180-, 400-, and 900-foot aquifers. That connectivity, and the induced leakage from the upper aquifers as the Deep Aquifer system is pumped, provides a preferential pathway for seawater intrusion into the Deep Aquifer system.

The FSEIR's responses also miss the point that increased pumping from the 900-foot aquifer further contributes to the existing intrusion of the 180-foot and 400-foot aquifers. The UWMP cites WRIME's 2003 "Deep Aquifer Investigative Study" as evidence that pumping from the Deep Aquifer will in fact induce increased seawater intrusion to the upper aquifers due to vertical connectivity between the three aquifers.[44] However, neither the WSA nor the SEIR, which cite other portions of the UWMP, report this conclusion from the UWMP.

2. Increased pumping from the Deep Aquifer system will deplete the 900-foot aquifer and may induce additional seawater intrusion.

Analysis in WRIME 2003 supports the conclusion that increased pumping from the 900-foot aquifer would induce additional intrusion into the 180-foot and 400-foot aquifers:

> The response curves indicate that additional increases in the deep aquifer groundwater pumping in the coastal areas may induce additional reduction in the groundwater heads, and subsequently additional landward subsurface flows from across the coastline.[45]

Modeling in WRIME 2003 indicates that increasing pumping of the deep aquifer by 1,400 afy over the 2,400 afy baseline 2003 pumping level would lower groundwater levels in the 180-foot, 400-foot, and Deep Aquifers, would induce vertical flows from the upper to the lower aquifers, and would induce substantial coastal groundwater flow, i.e., seawater intrusion.[46] In short, increased pumping from the Deep Aquifer systems appears likely to induce seawater intrusion in the upper aquifers (the 180-foot and 400-foot aquifers) even if

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44 MCWD, 2010 UWMP, p. 36.

45 WRIME, Deep Aquifer Investigative Study, 2003, p. 5-2, attached.

46 WRIME, Deep Aquifer Investigative Study, 2003, pp. 4-11 to 4-12.

the Deep Aquifers are not yet intruded. The SEIR fails to discuss or disclose this, even in response to LandWatch's questions.

WRIME 2003 provides further evidence that there are two distinct 900-foot aquifers. In particular, it concludes that the uppermost deep aquifer is in the Paso Robles Formation and the lowermost is in the Purisima Formation and that the "Purisima Formation is relatively isolated hydraulically from the overlying Paso Robles Formation near the coast."[47] However, the lack of hydraulic connection between the two distinct aquifers of the Deep Aquifer system does not matter with respect analysis of induced seawater intrusion. This is because WRIME 2003 concludes that recharge to both the Paso Robles and Purisma portions of the deep aquifer come from the overlying aquifers: "[t]he areal distribution and stratigraphic location of the Paso Robles and Purisma Formations limit recharge to leakage from overlying aquifers," i.e., the 180-foot and 400-foot aquifers.[48] Furthermore, as noted, increased pumping from the lower Deep Aquifer is not viable due to lack of potential yield.[49]

WRIME 2003 concludes that there was an equilibrium between pumping from the 900-foot aquifer and its recharge from the overlying aquifers back in 2003.[50] It also concludes that "the volume of groundwater in storage in the lower aquifers is small" and that "[i]ncreased production would likely come from increased leakage."[51] Thus, it concludes that increases in pumping of the 900-foot aquifer may induce additional intrusion in the upper aquifers.[52] Only a small portion of coastal pumping came from the Deep Aquifer in 2003. The SVWP EIR reports that 90% of groundwater pumping north of Salinas came from the 400-foot aquifer and only 5% from deep aquifer as of 2003.[53] Thus, the shift from the 400-foot to the 900-foot aquifer to support increased pumping for the Ord Community since 2003 will likely upset that equilibrium noted by WRIME and will have a potentially substantial effect on the 900-foot and overlying aquifers, either by depleting the 900-foot aquifer, by increasing the induced seawater intrusion in the upper aquifers, or both.

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47 WRIME 2003, pp, 5-1 to 5-2.

48 WRIME 2003, p. 5-1.

49 WRIME, Deep Aquifer Investigative Study, 2003, p. 4-7.

50 WRIME 2003, p. 5-1.

51 WRIME 2003, p. 5-1.

52 WRIME 2003, p. 5-2.

53 SVWP DEIR, pp. 5.3-1 to 5.3-3.

In sum, the implications from WRIME 2003 are, first, that pumping from the 900-foot aquifer may continue to induce seawater intrusion to the aquifers above it because those aquifers will be induced to leak downward to provide recharge.[54]

Second, if increased leakage from the upper aquifers were less than the increased pumping rate, the 2003 equilibrium between recharge and pumping would be upset and the 900-foot aquifer would be depleted because the only source of recharge is the overlying aquifers and the "volume of groundwater in storage in the lower aquifers is small."[55] Thus, increased pumping of the 900-foot aquifer must either deplete the 900-foot aquifer via mining or induce seawater intrusion in the upper aquifers by increasing their leakage, neither of which are acknowledged by the SEIR.

Third, if and when the seawater intrusion front of the 180-foot and 400-foot aquifers moves inland over the areas of vertical connectivity between the 180-foot, 400-foot, and 900-foot aquifers, increased pumping of the 900-foot aquifer may result in its recharge with saline contaminated water from the 180-foot and 400-foot aquifers. Interaquifer flow from a contaminated upper aquifer to a lower aquifer as a source of salinity contamination of the lower aquifer has already been documented between the 180-foot and 400-foot aquifers in the Fort Ord area due to thin or missing aquitard, direct hydraulic connection, or wells that act as conduits between aquifers.[56] The agricultural wells that also tap the Deep Aquifer system[57] typically have long screened intervals to maximize production; and this cross connection of multiple aquifers increases the potential for downward vertical migration of contamination.[58] Interaquifer flow from well bores is common. For example, in the Santa Clara Valley, USGS estimated that the majority of recharge to deeper zone aquifers was from well bores.

There is already possible evidence of potential seawater intrusion into the Deep Aquifer system provided in the State of the Salinas River Groundwater Basin Report. Two Deep Aquifer hydrographs in the Pressure Subarea show increasing Chloride indices; one of which more than doubled between 1980 and 2013; the other showed an increasing trend

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54 WRIME 2003, p. 5-1 ("increased production would likely come from increased leakage").

55 WRIME 2003, p. 5-1.

56 MCWRA, State of the Salinas River Groundwater Basin, p. 5-8.

57 MCWD, 2015 draft UWMP, p. 38, available at http://www.mcwd.org/docs/agenda_minutes/2016-06-06_board/Item%2011-A%20-%20MCWD%20Draft%202015%20UWMP%20v20160520.pdf.

58 Hanson, et al., Comparison of groundwater flow in Southern California coastal aquifers, Geological Society of America, Special Paper 454, 2009, pp. 6-7, 11, 13, 14, 19, 26, available at https://www.researchgate.net/publication/279335540_Comparison_of_groundwater_flow_in_Southern_California_coastal_aquifers.

until sampling stopped in about 2000.[59] The Report does not address this trend in Chloride concentration in the Deep Aquifer in the narrative. However it does note that the groundwater levels "exhibit an overall steady decline since approximately 2003."[60] The Report states that of 580 measurement points used in the study, only 12 are screened with the Deep Aquifer in the Pressure Subarea,[61] underscoring the dearth of groundwater level and groundwater quality data available for the Deep Aquifer in the Pressure Subarea, and associated higher uncertainty for predicting the potential for significant impacts from the pumping deeper in the basin.

Finally, the SEIR also fails to disclose and discuss the fact that the 900-foot aquifer itself may be open to Monterey Bay, providing a direct route for seawater intrusion to that aquifer without mediation by the upper aquifers. The BRP PEIR states that "there is no evidence that the Deep Zone is not connected to the ocean." (BRP PEIR, p. 4-57.) The recent State of the Basin report also states that "[u]nlike the P-180 and P-400 Aquifers, it is not known whether the or not the Pressure Deep Aquifer is hydraulically connected to the ocean."[62] If it is connected, there is an additional path to intrusion into the 900-foot aquifer that could be induced by increased pumping.

F. The Monterey Downs SEIR fails to provide an adequate cumulative analysis because the relevant scope of cumulative analysis is the hydraulically connected SVGB, not merely the BRP area, and because there is no basis to deem an additional 250 afy of pumping to be less than a considerable contribution to a significant cumulative impact merely because it represents a small percentage of total SVGB pumping.

LandWatch objected that the DSEIR limits the geographic scope of the cumulative analysis of groundwater supply impacts to Fort Ord projects. (DEIR 4.8-47, 4.19-30 to 4.19-32.) Thus, the DSEIR does not provide baseline or projected future demand for the Pressure Subarea or the SVGB as a whole, or identify either the projects that would contribute to the cumulative impacts or a summary of projections of the water demand of those projects. As discussed, it is well understood that, while coastal pumping has the greatest effect, seawater intrusion is a result of cumulative overpumping from all areas of the SVGB, because these areas are hydraulically connected.[63] The fact that actual current baseline pumping for the SVGB as a whole is well in excess of the pumping assumed in the SVWP EIR, and that this pumping is projected to substantially exceed the level assumed by the SVWP EIR, is highly

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59 MCWRA, State of the Salinas River Groundwater Basin, Figure 3-8.

60 MCWRA, State of the Salinas River Groundwater Basin, p. 3-16.

61 MCWRA, State of the Salinas River Groundwater Basin, p. 3-16.

62 MCWRA, State of the Salinas River Groundwater Basin, p. 6-4.

63 MCWRA, SVWP Final EIR, p. 2-35 to 2-36.

relevant to the analysis of the extent of cumulative impacts in the form of seawater intrusion.

As LandWatch pointed out, the BRP PEIR did assess cumulative impacts of Fort Ord groundwater pumping in the regional context of total demands on the SVGB and, indeed, concluded that the cumulative impact of the BRP was significant and unavoidable. (BRP PEIR p. 5-5.) The Monterey Downs SEIR does not report this analysis or conclusion.

The FSEIR acknowledges that the geographic scope of the SEIR's cumulative analysis does not coincide with the geography in the BRP PEIRs' cumulative impact analysis because it is limited to the BRP area, unlike the BRP PEIR's regional analysis. (FSEIR p. 11.4-1024.) The FSEIR argues that the DSEIR has simply made the choice to rely on a summary of projections and has chosen the summary of projections of the BRP area's future water demand, which does not include demand outside of the Ord Community. (FSEIR p. 11.4-1024.) However, the fact that CEQA may permit an agency to use a summary of projections to identify relevant cumulative impact sources cannot justify the arbitrary choice of a summary of projections for a geographic area that is too limited to support a meaningful cumulative analysis.

Although the DSEIR lacks any SVGB baseline data, the FSEIR provides a belated estimate of total current pumping in the SVGB. (FSEIR p. 11-4-1023 to 1024.) However, the FSEIR does not use this baseline data in any way, e.g., by relating it to an analysis of groundwater impacts or to the modeling for the Salinas Valley Water Project that was uncritically cited by the 2010 MCWD UWMP and the Diamond West WSA Supplement.[64] Nor do the FSEIR or DSEIR provide any assessment of future total pumping in the SVGB, despite LandWatch's objection that this data is needed for an adequate analysis.

Instead, the FSEIR argues that the DSEIR relied on the MCWD 2010 UWMP analysis of seawater intrusion, and that its "impact analysis is based on the 2010 UWMP, which encompasses the MCWD service area." (FSEIR pp. 11.4-1023, 11.4-1025.) The FSEIR then recites a section of the UWMP that relies on the future efficacy of the Salinas Valley Water Project to control seawater intrusion and maintain groundwater elevations, including the out-of-date and incorrect claim that the SVWP will result in a 6,000 afy surplus in the SVGB. (FSEIR p. 11.4-1025, quoting MCWD 2010 UWMP, p. 53.) The FEIR's response fails to provide the requested information regarding existing and future groundwater pumping in the SVGB and fails to relate that information to a sustainable level of pumping that does not cause depletion or seawater intrusion. The response also fails to explain why limiting the scope of the cumulative analysis to the BRP area is justified in light of the hydraulic connection of the SVGB as a whole to the BRP area.

Most significantly, the FSEIR's responses fail to disclose the fact that there is an existing significant cumulative impact that is not projected to be mitigated by existing groundwater

64 See MCWD, 2010 UWMP, pp. 31, 41; Diamond West, WSA Supplement, 2014, p. 13.

management projects and that any additional pumping, including the pumping of the unallocated portion of the 6,600 afy entitlement, will aggravate this condition.

The FSEIR claims that its response to LandWatch's comment PO 208-5 explains why the geographic scope of the cumulative analysis is limited to the BRP area. (FSEIR pp. 11.4-1020, response to PO 208-4, and p. 11.4-1023, response to PO 208-15.) The response to PO 208-5 does not justify the limitation of the geographic scope to the Fort Ord area. That response purports to address LandWatch's objections that the DSEIR inadequately identifies and characterizes the pumping source aquifer(s) within Fort Ord, fails to identify other wells and cumulative pumping in the 900-foot aquifer, and fails to discuss recharge, saline contamination and sustained yield of the 900-foot aquifer. (FSEIR, pp. 11.4-1020 to 11.4-1022.) To the extent that the response addresses the SRGB outside the Fort Ord area at all, it is only to repeat the DSEIR's claims that its analysis is based on the UWMP and that the UWMP discusses seawater intrusion in the SVGB. Like the DSEIR, the FSEIR does not actually report or evaluate the 2010 UWMP's conclusions about the SVGB or address the post-2010 information indicating that seawater intrusion is not under control.

The FSEIR argues that agricultural water use consumes the majority of SVGB water and that the MCWD pumping is only 1% of total SVGB pumping. (FSEIR p. 11.4-1024.) This argument fails to recognize that coastal pumping like MCWD's particularly aggravates seawater intrusion, that this coastal pumping must be reduced and replaced now to halt seawater intrusion.[65] It also fails to recognize that it is simply irrelevant how the pumped groundwater is used:

> . . . the ability to halt seawater intrusion, now and in the future, is not based on whether it is delivered to agricultural uses or urban uses. Both of these uses draw the same water from the same groundwater basin. Reducing withdrawal of groundwater in the northern Salinas Valley, whether through replacement of agricultural or urban pumping, has the same effect.[66]

If the implication of the FSEIR's claim that MCWD pumping amounts to only 1% of total SVGB pumping is that this pumping, or the increased pumping for the Monterey Downs project, does not constitute a considerable contribution to seawater intrusion, neither the FSEIR nor the DSEIR actually state this as the basis of the cumulative impact analysis. However, if the claim were made, it would not be accurate. CEQA does not permit an agency simply to dismiss a project's impact as less than a considerable contribution because it is relatively small. The potential significance must be evaluated in the context of the severity of the cumulative impact, which the SEIR fails to do.

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65 MCWRA, SVWP DEIR, p. 3-23; MCWRA, Protective Elevations, pp. 1, 11.

66 MCWRA, SVWP DEIR, p. 7-8.

Here, the magnitude of the annual storage change in the Pressure Subarea that has caused seawater intrusion is from about -200 afy to about -1,600 afy over the period from 1944 to 2013.[67] From 1959 to 2013, the average change in storage was from -50 afy to -500 afy.[68] The estimated safe or sustainable yield for the Pressure Subarea, i.e., the level of pumping that could be sustained without seawater intrusion, is from 110,000 to 117,000 afy, but groundwater pumping exceeds this yield by about 12,000 to 19,000 afy.[69] The significance of the proposed increase in pumping to support Phases 1-3 of the project, which would be at least 250.6 afy, and which may come to 396.3 afy if the currently unavailable recycled water does not materialize (DSEIR, p. 4.19-23), should be assessed in relation to these figures, not in relation to the entire 500,000+ afy pumping from the SVGB, because seawater intrusion is caused by marginal effects, i.e., storage changes (aquifer depletion) and pumping in excess of sustainable yield, not by total pumping. The SEIR does not provide this comparison. In view of the recognition that coastal pumping must be reduced to address seawater intrusion,[70] there is no longer any cushion for increased pumping and any additional pumping at the margin should be deemed a considerable contribution.

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67 MCWRA, State of the Salinas Valley Groundwater Basin, p. 4-12 (average storage change, depending on the storage coefficient value).

68 MCWRA, State of the Salinas Valley Groundwater Basin, p. 4-25.

69 MCWRA, State of the Salinas Valley Groundwater Basin, p. 4-25.

70 MCWRA, Protective Elevations, pp. 1, 11; MCWRA, State of the Salinas Valley Groundwater Basin, p. 6-3.

Attachment 1 – Modeling assumptions and outcomes for the SVWP; MCWRA's acknowledgment that the SVWP will not halt seawater intrusion

1. **The SVWP EIR did not project that the SVWP would halt long-term seawater intrusion.**

MCWRA prepared and certified an EIR for the SVWP in 2001 and 2002. (MCWRA, SVWP EIR, 2002.) Based on specific assumptions about future demand and safe yield (discussed below), the SVWP EIR projected that the proposed SVWP "would reverse the annual reduction in groundwater storage to an approximately 2,500 AFY increase in groundwater storage." (SVWP FEIR 3-30.) Thus, it projected that seawater intrusion could be halted. However, the SVWP EIR qualified this conclusion in two critical respects.

First, the SVWP EIR cautioned that "any additional water needs within an intruded groundwater basin would exacerbate seawater intrusion." (SVWP EIR, p. 7-7.) So the conclusion was tied to specific assumptions regarding water use. As discussed below, future water use is projected to exceed the levels projected in the SVWP EIR. Indeed, MCWRA's Rob Johnson acknowledged to the Monterey County Planning Commission that the SVWP EIR demand projections were not accurate and that pumping was more than projected. (Transcript of Monterey County Planning Commission, Oct. 29, 2014, p. AR005187; available in video file at http://monterey.granicus.com/MediaPlayer.php?view_id=14&clip_id=2745.)

Second, the SVWP EIR acknowledged that the proposed project would only halt seawater intrusion based on 1995 levels of demand:

> While the SVIGSM indicates that seawater intrusion will be halted by the project (in conjunction with the CSIP deliveries) based on current (1995) demands, with a projected increase in water demands (primarily associated with urban development) in the north valley area in the future, seawater intrusion may not be fully halted based on year 2030 projections. For the year 2030, modeling indicates seawater intrusion may be 2,200 AFY with surface water deliveries only to the CSIP area. (SVWP DEIR, p. 3-23.)

The Department of the Interior pointed out that the SVWP EIR contradicts itself in stating that "the proposed action would halt seawater intrusion" and also that "hydrologic modeling shows that the project may not halt seawater intrusion in the long-term future" and asked for clarification. (SVWP FEIR, p. 2-82, comment 2-12.) In response, the SVWP FEIR again acknowledged that its modeling only showed that the SVWP would "halt seawater intrusion in the near term" based on 1995 water demand. (SVWP FEIR, p. 2-91.) However, with anticipated 2030 demand, that modeling showed that "seawater intrusion with implementation of the proposed project may total 2,200 acre-feet per year (AFY) (10,500 AFY of intrusion is anticipated to occur without the project). For this reason, the Draft EIR/EIS reports that the SVWP may not halt seawater intrusion in the long term." (SVWP FEIR, p. 2-91.) The 2010 Monterey County General Plan EIR itself acknowledges

that the SVWP may only halt seawater intrusion in the short term. (2010 General Plan EIR, p. 4.3-38.)

Questioned about this at the October 29, 2014 Monterey County Planning Commission hearing, MCWRA's Rob Johnson acknowledged that the SVWP would only halt seawater intrusion based on 1995 land use. (Transcript of Monterey County Planning Commission Hearing, Oct. 29, 2014, p. AR005188.) As discussed below, Mr. Johnson also acknowledged that groundwater pumping is higher than anticipated by the SVWP EIR and that an additional 58,000 af/y of groundwater, beyond that provided by the current suite of water supply projects, is still needed to halt seawater intrusion. (*Id*., pp. AR005178-005179, 005189-005190.)

2. As MCWRA acknowledges, groundwater pumping has exceeded the level assumed in the SVWP EIR, and this vitiates its analysis, which was expressly based on the assumption that groundwater pumping would decline over time.

MCWRA reports show that pumping is much higher than predicted by the SVWP EIR. To determine the extent of overdrafting and seawater intrusion, the SVWP EIR relied on modeling provided by the Salinas Valley Integrated Ground and Surface Water Model ("SVGISM'), which in turn was based on assumptions regarding land use, population, and water use. (SVWP EIR, pp. 5-1 (identifying baseline and future conditions), 5.3-10 to 5.3-11 (overview of SVGISM), 7-4 to 7-5 (detailing major assumptions used in the SVGISM regarding population and irrigated acreage).)

As set out in the table below, the SVWP EIR reported its assumptions and modeling results for two scenarios: 1995 baseline conditions and 2030 future conditions:

SVWP EIR: population and land use assumptions with baseline and projected water use	1995	2030
Population	188,949 persons	355,829 persons
Urban water pumping	45,000 afy	85,000 afy
Farmland	196,357 acres	194,508 acres
Agricultural water pumping	418,000 afy	358,000 afy

Source: SVWP EIR, pp. 1-7 (Table 1-2, "Estimated Existing and Future Water Conditions"); pp. 5-1, 6-3, 7-3, 7-10 (identifying baseline and future conditions).

The SVWP EIR assumed that agricultural water use would decline by 60,000 afy from 1995 to 2030 due to a 5% increase in water conservation, changes in crop uses, and a 1,849 acre

decrease in irrigated agricultural acreage. (SVWP EIR pp. 1-7, 7-5, 7-10.) The SVWP EIR assumed that urban water use would increase by 40,000 afy between 1995 and 2030 based on population growth and an assumed 5% per capita reduction in water demand due to conservation. (SVWP EIR, pp. 1-7, 7-5.)

In sum, the SVWP EIR assumed that groundwater pumping in Zone 2C would decline 20,000 afy over a 35 year period, from a total of 463,000 afy in 1995 to 443,000 afy in 2030.

In fact, in the first 20 years since 1995 pumping has greatly exceeded the SVWP EIR projection. Reported groundwater pumping in Zones 2, 2A, and 2B has averaged 502,161 afy. Adjusted to include an estimate for non-reporting wells in these zones, the average is 529,024. These data are based on the annual Ground Water Summary Reports published by MCWRA in 1995-2014, available at http://www.mcwra.co.monterey.ca.us/groundwater_extraction_summary/groundwater_extraction_summary.php. The data are summarized in the table below.

Year	Ag	Urban	Total	Percent of wells not reporting	Total divided by percent of wells reporting to adjust for non-reporting wells
1995	462,268	41,884	504,512	2%	514,808
1996	520,804	42,634	563,438	4%	586,915
1997	551,900	46,238	598,139	7%	643,160
1998	399,521	41,527	441,048	7%	474,245
1999	464,008	40,559	504,567	9%	554,469
2000	442,061	42,293	484,354	11%	544,218
2001	403,583	37,693	441,276	18%	538,141
2002	473,246	46,956	520,202	7%	559,357
2003	450,864	50,472	501,336	3%	516,841
2004	471,052	53,062	524,114	3%	540,324
2005	443,567	50,479	494,046	2%	504,129
2006	421,634	49,606	471,240	4%	490,875
2007	475,155	50,440	525,595	3%	541,851
2008	477,124	50,047	527,171	3%	543,475
2009	465,707	45,517	511,224	3%	527,035

2010	416,421	44,022	460,443	3%	474,684
2011	404,110	44,474	448,584	3%	462,458
2012	446,620	42,621	489,241	3%	504,372
2013	462,873	45,332	508,205	3%	523,923
2014	480,160	44,327	524,487	2%	535,191
20 year average			502,161 afy		529,024 afy

Source: Ground Water Summary Reports published by MCWRA, 1995-2014, available at http://www.mcwra.co.monterey.ca.us/groundwater_extraction_summary/groundwater_extraction_summary.php.

The reported pumping data does not include any pumping from the portion of Zone 2C that is located outside of Zones 2, 2A, and 2B. (See Monterey County 2010 General Plan FEIR, pp. S-13, S-127.) The County estimated that this pumping amounted to at least 4,574 afy in 2005. (Monterey County 2010 General Plan FEIR, p. S-136.) Adding this to the adjusted average pumping total for Zones 2, 2A, and 2B, average pumping has been 533,598. This is 70,598 afy higher than the SVWP EIR's 1995 baseline and 90,598 afy higher than its projected 2030 demand.

As noted, the SVWP EIR analysis was based on specific assumptions about future water demand, and it cautioned that "any additional water needs within an intruded groundwater basin would exacerbate seawater intrusion." (SVWP DEIR, p. 7-7.)

In sum, for more than half of the planning period covered by the SVWP EIR's 1995-2030 projections, groundwater pumping has greatly exceeded its assumed demand levels. The amount by which actual demand exceeds assumed demand is two to three times greater than the amount of water that the SVWP was expected to provide.[71]

MCWRA's Rob Johnson acknowledged that actual demand has exceeded the SVWP EIR's projections. (Transcript of Monterey County Planning Commission Hearing, Oct. 29, 2014,

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[71] The SVWP was intended retain up to an additional 30,000 afy of water in dams and then provide about 9,700 afy of that water to the Castroville Seawater Intrusion Project ("CSIP") to replace groundwater pumping, about 10,000 afy to increase basin recharge, and another 10,000 afy for instream flow augmentation. Monterey County 2010 General Plan DEIR, pp. 4.3-36 to 4.3-38; Monterey County 2010 General Plan FEIR 2-68 to 2-71. The Monterey County General Plan DEIR, FEIR Supplemental materials, and FEIR are available at http://co.monterey.ca.us/government/departments-i-z/resource-management-agency-rma-/planning/resources-documents/2010-general-plan/draft-environmental-impact-report-deir, http://co.monterey.ca.us/government/departments-i-z/resource-management-agency-rma-/planning/resources-documents/2010-general-plan/supplemental-material-to-final-environmental, http://co.monterey.ca.us/government/departments-i-z/resource-management-agency-rma-/planning/resources-documents/2010-general-plan/final-environmental-impact-report-feir.

p. AR005187.) Mr. Johnson acknowledged that additional water supply projects delivering at least 58,000 afy will be required to halt seawater intrusion. (*Id.* pp. AR005178-005179, 005189-005190)

The growth in pumping is associated with increases in agricultural land use. As noted, the SVWP EIR assumed that irrigated agricultural acreage would decrease from 196,357 acres in 1995 to 194,508 acres in 2030. (SVWP EIR, p. 7-10.) However, agricultural acreage has actually increased since 1995.

- The SVWP Engineers Report reports that there were 212,003 acres of irrigated farmland in Zone 2C as of 2003. (SVWP Engineers Report, pp. 3-10, 3-15 (Tables 3-5 and 3-9 providing acreage totals for "Irrigated Agriculture"), available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_I/salinas_valley_water_project_I.php.) This is substantially more irrigated acreage than the 196,357 acres that the SVWP EIR reported for 1995. (SVWP EIR, p. 7-10.) The SVWP Engineers Report data were based on "parcel information, including land use, acreage, zone and other data" developed by MCWRA. (Engineers Report, p. 3-10.)

- The 2010 Monterey County General Plan EIR reported Department of Conservation farmland mapping data showing an increase of 8,209 acres of habitat converted to new farmland from 1996-2006 but only 2,837 acres of existing agricultural land lost to urban use. Monterey County 2010 General Plan DEIR, pp. 4.9-46 and 4.2-7 (showing farmland gains and losses 1996-2006 based on FMMP data). This represents a net gain of farmland of 5,372 acres, and does not account for additional water demands from multiple crops (2-4) per acre per season.

Furthermore, there is every reason to believe that the increase in irrigated acreage will continue and that the decrease in irrigated agricultural land between 1995 and 2030 projected in the SVWP EIR will not occur. Based on the past data related to conversion of habitat to farmland, the 2010 Monterey County General Plan DEIR projected that future agricultural acreage would increase from 2008 to 2030, and the General Plan FEIR admitted that the large future net increase in farmland would create additional water demand not anticipated by the SVWP EIR: 17,537 afy of water. (Monterey County 2010 General Plan DEIR, p. 4.9-64 (Table 4.9-8); Monterey County 2010 General Plan FEIR, pp. 2-38, 4-129 (revised table 4.9-8), S-19 to S-20, S-137 to S-138 (revised Table 4.3-9(c), note 7)).

3. MCWRA also acknowledges that the existing SVWP will not halt seawater intrusion and that additional water supply projects are required.

The MCWRA has acknowledged that the SVWP will not in fact be sufficient to halt seawater intrusion. In testimony to the Monterey County Planning Commission, MCWRA's Rob Johnson stated that the SVWP is not be the final water project needed to halt seawater intrusion and that it will in fact be necessary to find additional water supplies totaling at least 58,000 afy to achieve this. (Transcript of Monterey County Planning Commission Hearing, Oct. 29, 2014, AR005164, 005178-005179, 005189-005190) The 58,000 afy figure

is based on modeling performed by MCWRA in connection with its efforts to secure surface water rights on the Salinas River in order to mitigate seawater intrusion.

The MCWRA now seeks, under a settlement agreement with the State Water Resources Control Board, to perfect surface water rights to 135,000 afy of Salinas River water in order to construct an additional Salinas Valley water project to attempt to halt seawater intrusion. (See MCWRA, Salinas Valley Water Project Phase II, Overview, Background, Status, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_II/salinas_valley_water_project_II_overview.php.) MCWRA seeks to retain the right to the surface water entitlement by asserting the need for another project to halt seawater intrusion. Modeling undertaken for the MCWRA in 2013, establishes that an additional 135,000 afy of surface water flows will be needed in order to supply the additional 60,000 afy of groundwater that is now projected to be required to maintain groundwater elevations and a protective gradient to prevent further seawater intrusion. (Geoscience, Protective Elevations to Control Seawater Intrusion, Nov. 13, 2013, p. 11, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_II/salinas_valley_water_project_II_overview.php (link to "Technical Memorandum.")) The MCWRA has not yet conducted environmental review for a new project to supply the needed water. (See MCWRA, Salinas Valley Water Project Phase II, Status, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_II/salinas_valley_water_project_II_project_status.php.)There is no assured funding source for it.

Although the MCWRA website refers to the currently proposed new project as "SVWP Phase II," it is not the same project that was identified as a potential second phase of the SVWP in the 2001/2002 SVWP EIR. The second phase of the SVWP envisioned in the 2001/2002 SVWP EIR would have consisted of only an additional 8,600 afy of Salinas river diversion, increased use of recycled water, supplemental pumping in the CSIP area, and a pipeline and delivery to an area adjacent to the CSIP area. (SVWP EIR, p. 3-23 to 3-24.) The currently proposed project is much larger in scope and would include different and more extensive infrastructure: it would divert an additional 135,000 afy at two new diversion facilities and would deliver that water through injection wells, percolation ponds, direct supply of raw water, or a treatment system. (MCWRA, SVWP Phase II website, Project Description, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_II/salinas_valley_water_project_II_overview.php)

To my knowledge, neither the SVWP Phase II project identified at the conceptual level in the 2001/2002 SVWP EIR nor the newly proposed SVWP Phase II has been planned at any level of significant detail or environmentally reviewed. The SVWP EIR and the Monterey County 2010 General Plan EIR both acknowledge that impacts related to the initially conceived second phase project have not been evaluated, and the Monterey County 2010 General Plan EIR treated these impacts as significant and unavoidable because they remain largely unknown. (SVWP FEIR, pp. 2-92, 2-243; Monterey County 2010 General Plan, p. 4.3-146.)

The phase two project now being discussed has not had any environmental review, but it would likely result in significant potential environmental impacts, based on MCWRA's determination that an EIR is required. (MCWRA Notice of Preparation of EIR, Salinas Valley Water Project Phase II, June 2014, available at http://www.mcwra.co.monterey.ca.us/salinas_valley_water_project_II/salinas_valley_water_project_II_project_status.php.)

Finally, the 2015 MCWRA State of the Salinas Valley Groundwater Basin report establishes that the SVGB as a whole and the Pressure Subarea are both being pumped unsustainably in excess of safe yield.[72] This overdraft condition has caused, is causing, and will continue to cause seawater intrusion, particularly in the 180-foot and 400-foot aquifers of the Pressure Subarea.[73]

In sum, the water supply provided by the SVWP is well documented to be insufficient to prevent cumulative groundwater pumping from further aggravating seawater intrusion. Major additional water supply projects with currently unknown potential environmental impacts will be required to address this significant cumulative impact.

72 MCWRA, State of the Salinas River Groundwater Basin, pp. 4-25 to 4-26.

73 MCWRA, State of the Salinas River Groundwater Basin, pp. 5-1 to 5-8, 6-1 to 6-4.

RESUME

Timothy K. Parker, PG, CEG, CHG
Principal

WORK EXPERIENCE

2009 – Present: **Parker Groundwater, President/Principal.** Sacramento, California. Privately owned business, specializing in strategic groundwater planning, groundwater monitoring, groundwater modeling, groundwater recharge and aquifer storage recovery projects, program implementation, stakeholder facilitation, groundwater monitoring, policy and regulatory analysis, environmental document review and litigation support. Provides strategic planning, policy consulting and groundwater technical expertise to public and private sector clients to develop effective, sustainable solutions to complex problems in the water and evolving environmental and energy industries.

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California Certified Engineering Geologist No. 1926
California Certified Hydrogeologist No. 0012

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2007 - 2009: Member - Government Affairs Committee
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2005 – Present: Chair - Regional Groundwater Management Task Force, Government Affairs Committee
2004 – 2005, 2007,2009-10: Chair – Theis Conference Committee
2002 – Present: Member – Theis Conference Committee
2002 – Present: Member - Regional Groundwater Management Task Force, Government Affairs Committee
2003 – Present: Member – Groundwater Protection and Management Subcommittee
2009 – Present: Member - ASR Task Force
2009 – Present: Member - Hydraulic Fracturing Task Force
2008 – 2009: Member – CO2 Sequestration Task Force

American Ground Water Trust
2009 – 2012: Chair
2005 - 2013: Director

California Groundwater Coalition
2007-Present: Director

Groundwater Resources Association of California
2000 – Present: Director
2000 – 2001: President State Organization
2001 – Present: Legislative Committee Chair
1998-1999 Vice President
1996-1997 Secretary
1995-1996 President Sacramento Branch
1993-1994 Member-at-Large Sacramento Branch

ACADEMIC BACKGROUND
BS 1983, Geology, University of California, Davis

Graduate studies in hydrogeology, hydrology, engineering geology, waste management engineering

Selected Publications

California Groundwater Management, Second Edition, Groundwater Resources Association of California, co-author and project manager, 2005.

Water Contamination by Low Level Organic Waste Compounds in the Hydrologic System, in *Water Encyclopedia*, Wiley, 2004.

Potential Groundwater Quality Impacts Resulting from Geologic Carbon Sequestration, Water Research Foundation, co-author, 2009.

Aquifer Storage and Recovery in the US, ASR 9, American Ground Water Trust, Orlando Florida, September 2009 – a compilation of key ASR issues on DVD, contributing editor and speaker, 2010.

Sustainability From The Ground Up – Groundwater Management In California – A Framework, Association of California Water Agencies, principal author, 2011.

ISMAR9 Call to Action: Sustainable Groundwater Management Policy Directives, Principal Author, 2016.

EXHIBIT 9

February 15, 2018

John Farrow
M.R. Wolfe & Associates, P.C
555 Sutter Street, Suite 405
San Francisco, CA 94102

Re: Groundwater Impacts from Increased Pumping to Support Ord Community Development

Dear Mr. Farrow:

At your request, I have reviewed the Draft Initial Study/Negative Declaration for the Ord Community Sphere of Influence Amendment and Annexation together with the documents cited below. As set out in the discussion below, increased pumping to support new development in the Ord Community would aggravate existing seawater intrusion and further deplete the Deep Aquifer. The reported existence of an area of relatively fresher water in what Marina Coast Water District terms the North Marina Area does not change this conclusion. My resume is attached.

1. **Increased pumping for new development in the Ord community would aggravate seawater intrusion and further deplete the Deep Aquifer.**

As explained in my October 8, 2016 memorandum regarding the proposal to increase groundwater pumping to support the Monterey Downs project in the Ord community, seawater intrusion continues in the Salinas Valley Groundwater Basin (SVGB) due to overdraft conditions, despite various groundwater management projects.[1] The situation has not improved since my 2016 memorandum. The most recent MCWRA mapping shows continued substantial increase in seawater intruded areas, which have occurred *despite* reductions in MCWD pumping during the 2006-2015 period.[2] Groundwater levels continue

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[1] Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016.

[2] MCWRA, Historic Seawater Intrusion Map, Pressure 400-Foot Aquifer, June 7, 2017, available at http://www.co.monterey.ca.us/home/showdocument?id=19378; MCWRA, Historic Seawater Intrusion Map, Pressure 180-Foot Aquifer, June 7, 2017, available at http://www.co.monterey.ca.us/home/showdocument?id=19376; MCWD, 2015 Urban Water Management Plan (UWMP), Table 4.1 (reporting total MCWD pumping declined from 4,295 afy to 3,228 afy in that period), available at http://www.mcwd.org/docs/engr_files/MCWD_2015_UWMP_Final.pdf.

to decline, especially in the 400-foot aquifer.[3] MCWRA reports that acreage within the 500 mg/l or greater Chloride contour in the 400-foot aquifer has increased from 11,882 acres in 2005 to 17,125 acres in 2015.[4] Furthermore, because increases in intrusion may lag periods of drought, there may be substantial increases in intrusion still to come in response to the recent 4-year drought.[5]

In light of the continuing advance of seawater intrusion, MCWRA staff have recommended a moratorium on new wells in the Pressure 400-Foot Aquifer within an "Area of Impact" proximate to the 500 mg/l Chloride front.[6] MCWRA also recommends a moratorium on new wells within the entirety of the Deep Aquifers of the 180/400 Foot Aquifer Subbasin pending investigation of its viability as a source of water ("Deep Aquifer" has been called variously including the 900-foot Aquifer, and herein is used to refer to multiple water-bearing units underlying the Pressure 400-Foot Aquifer).[7]

In sum, as set out in my 2016 memorandum and confirmed by subsequent investigations, future increased groundwater pumping above existing levels, particularly from the areas proximate to the seawater intrusion front, will contribute to seawater intrusion. Because MCWD's current production wells serving the Ord community are located just inland of the seawater intrusion front in the 400-foot and Deep aquifers, increased pumping would aggravate seawater intrusion.[8]

MCWD has reported that its total pumping is a small fraction of total SVGB pumping.[9] As I explained in my 2016 memorandum, the relevant question for assessing the cumulative impact of additional pumping is not whether that amount is large compared to total SVGB pumping, but whether it represents a considerable increase in the magnitude of annual overdraft.[10] An increase of 2,492 afy to meet the projected increase in Ord community

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3 MCWRA, presentation of Groundwater Level Contours And Seawater Intrusion Maps, July 13, 2017, available at http://www.co.monterey.ca.us/home/showdocument?id=31294.

4 *Id.*

5 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 2-3.

6 MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, October 2017, pp. 2-9, available at http://www.co.monterey.ca.us/home/showdocument?id=57394.

7 *Id.*

8 MCWD, 2015 Urban Water Management Plan (UWMP), pp. 35, 45, available at http://www.mcwd.org/docs/engr_files/MCWD_2015_UWMP_Final.pdf.

9 MCWD, 2015 UWMP, p. 38; MCWD, Draft Initial Study/Negative Declaration, Ord Community Sphere of Influence Amendment and Annexation (Annexation Initial Study), p. 49.

10 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 19-20.

demand from 2020 to 2035[11] would be a considerable increase in the existing 12,000 afy to 19,000 afy overdraft of the Pressure Subarea. And that pumping would make a considerable contribution to the existing seawater intrusion problem.

The Deep Aquifer contains ancient water and there is no evidence that it is recharged except incidentally by leakage from overlying aquifers and via well-perforations completed in both the Deep and shallower aquifers, so any pumping from the Deep aquifer is groundwater mining.[12] In addition, any increase in pumping from the Deep Aquifer will likely induce increased seawater intrusion in the overlying 180- and 400-foot aquifers through leakage.[13] Any increase in pumping would simply lead to further depletion of this resource. As noted, MCWRA has recently recommended a moratorium on new pumping from the Deep Aquifer.

2. **The reported existence of an area of relatively fresh water behind the seawater intrusion front does not alter the conclusion that increased pumping will contribute to seawater intrusion.**

In connection with its opposition to the proposed location of the source water wells for the proposed California-America Water Company desalination plant, MCWD has engaged hydrologist Curtis Hopkins to evaluate water quality data from the test well for that project.[14] MCWD has also recently arranged for the collection and analysis of airborne electromagnetic (AEM) data to characterize the aquifer in an area that MCWD identifies as the North Marina Area of the Salinas Valley Groundwater Basin.[15] These analyses disclose the presence of some areas of relatively fresher water located north of, i.e, behind, the seawater intrusion front.[16]

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11 MCWD, Annexation Initial Study, p. 50

12 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 14-17; MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, October 2017, p. 54.

13 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 14-14; MCWD, 2015 UWMP, p. 50, citing WRIME, Deep Aquifer Investigative Study, 2003; MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, October 2017, p. 54.

14 Curtis Hopkins, North Marina Area Groundwater Data and Conditions, May 26, 2015, provided as Appendix E, pp. E-15 to E-50, of the MCWD, 2015 UWMP, available at http://www.mcwd.org/docs/engr_files/MCWD%202015%20UWMP%20Appendices_Final.pdf.

15 Ian Gottschalk and Rosemary Knight , Preliminary Interpretation of SkyTEM Data Acquired in the Marina Coast Water District, June 16, 2017.

16 That water is not freshwater in the sense of being potable, because it does not meet the 500 mg/l chloride drinking water standards. MCWD's consultants characterize it as freshwater because it meets a 3,000 mg/l TDS threshold, but its

In its response to my 2016 memorandum submitted by LandWatch in connection with the Monterey Downs project EIR, MCWD has previously argued that Curtis Hopkins' analysis indicates that "beneficial conditions have developed (or have always existed) in the North Marina Area of the 180-400 Foot Aquifer Subbasin and may be contrary to information published by the Monterey County Water Resources Agency (MCWRA)."[17] MCWD states that, because of this new information about "favorable groundwater conditions within the North Marina Area," its 2015 Urban Water Management Plan (UWMP) reflects a much different understanding of groundwater conditions than its 2010 UWMP.[18]

As noted, seawater intrusion will continue to occur in the SVGB for the foreseeable future because continued overdraft conditions preclude protective elevations. However, MCWD argues that findings by its consultant Hopkins contained in the 2015 UWMP contradict my conclusion with respect to seawater intrusion "*at least as applied to the North Marina Area*."[19]

But MCWD does not pump groundwater from the North Marina Area behind the MCWRA-mapped seawater intrusion front; its wells are located inland of the seawater intrusion front.[20] Furthermore, the reported area of fresher water in the North Marina Area is not in fact potable.[21] The UWMP admits with respect to the fresher water area behind the seawater intrusion front in the North Marina Area, "[f]uture use of this area for a potable groundwater supply may be unlikely; however, these conditions do show a retardation of seawater intrusion in these shallower aquifer zones in this coastal portion of the Salinas Valley Groundwater Basin, which provides some protection for inland uses of the 180-ft Aquifer."[22]

Despite the UWMP claim that the fresher water area in the North Marina Area provides some protection for inland uses of the 180-ft Aquifer, the 2015 UWMP does not dispute that seawater intrusion is a continuing problem caused by overdraft of the SVGB.[23] The UWMP acknowledges that the seawater intrusion front continues to advance inland, that this has required the historic relocation and deepening of MCWD wells, and that it continues to

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chloride levels exceed 1,000 mg/l in the study area. See Hydrological Working Group, Memorandum Responding To Comments On HWG Hydrogeologic Investigation Technical Report, January 4, 2018, pp. 3-4.

17 MCWD, Response to Timothy Parker Technical Memorandum Dated October 8, 2016, p. 5.

18 *Id.*

19 *Id.*, p. 6, emphasis added

20 MCWD, 2015 UWMP, pp. 35, 45.

21 Hydrological Working Group, Memorandum Responding To Comments On HWG Hydrogeologic Investigation Technical Report, January 4, 2018, pp. 3-4.

22 MCWD, 2015 UWMP, p. 48.

23 *Id.*, pp. 38, 43-45, 54-55

threaten its existing wells.[24] Consistent with my 2016 memorandum, the UWMP acknowledges that the reductions in agricultural pumping that were projected to occur in the analysis of the Salinas Valley Water Project have not in fact occurred.[25] And as I previously explained, the UWMP acknowledges that additional groundwater management projects may be required to halt seawater intrusion;[26] those projects are not currently committed or funded.[27]

With respect to the North Marina Area, the UWMP discloses that the recent data "may just reveal the groundwater conditions in an area previously lacking in data."[28] If so, it is evident that the existence of an area of relatively fresher water in the North Marina Area has not in fact retarded the historic advance of seawater intrusion, which has occurred *despite* groundwater conditions in the North Marina Area.[29] In this connection, it is important to understand that the MCWRA seawater intrusion mapping is based on sampling of production wells and represents an advance of the area in which groundwater exceeds the 500 mg/l chloride drinking water standard that can no longer be used for potable water. As the 2015 UWMP reports, MCWD has had to relocate its production wells due to the continuing advance of this seawater intrusion front, and its existing wells remain threatened.[30]

In addition, there is no evidence that the relatively fresher water in the North Marina Area provides any recharge to the Deep Aquifer, from which MCWD pumps groundwater for the Ord community. The Deep Aquifer is increasingly recognized as geologically isolated water without any substantial recharge source.[31] As the 2003 WRIME report and my 2016 memorandum explain, portions of the Deep Aquifer may be recharged through leakage in small amounts by water from the overlying aquifers.[32] To the extent that the Deep Aquifer

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24 *Id.*, p. 44.

25 *Id.*, p. 55.

26 *Id.*

27 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 7, 26-27.

28 *Id.*, p. 48.

29 Hydrological Working Group, Memorandum Responding To Comments On HWG Hydrogeologic Investigation Technical Report, January 4, 2018, p. 7 ("It is questionable how protective these groundwater levels are given the historic extent of seawater intrusion in the project area").

30 *Id.*, p. 45.

31 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 14-17; MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, October 2017, p. 54.

32 Timothy Parker to John Farrow, Technical Memorandum, Oct. 8, 2016, pp. 14-16, citing WRIME, Deep Aquifer Investigative Study, 2003.

is recharged by overlying aquifers, increased pumping of the Deep Aquifer has the potential to induce seawater intrusion in those overlying aquifers.[33]

Sincerely,

Timothy K. Parker, PG, CEG, CHG
Principal Hydrogeologist

33 *Id.*

RESUME

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2007 - Present: Chair - Groundwater Protection and Management Subcommittee
2005 – Present: Chair - Regional Groundwater Management Task Force, Government Affairs Committee
2004 – 2005, 2007,2009-10: Chair – Theis Conference Committee
2002 – Present: Member – Theis Conference Committee
2002 – Present: Member - Regional Groundwater Management Task Force, Government Affairs Committee
2003 – Present: Member – Groundwater Protection and Management Subcommittee
2009 – Present: Member - ASR Task Force
2009 – Present: Member - Hydraulic Fracturing Task Force
2008 – 2009: Member – CO2 Sequestration Task Force

American Ground Water Trust
2009 – 2012: Chair
2005 - 2013: Director

California Groundwater Coalition
2007-Present: Director

Groundwater Resources Association of California
2000 – Present: Director
2000 – 2001: President State Organization
2001 – Present: Legislative Committee Chair
1998-1999 Vice President
1996-1997 Secretary
1995-1996 President Sacramento Branch
1993-1994 Member-at-Large Sacramento Branch

ACADEMIC BACKGROUND
BS 1983, Geology, University of California, Davis

Graduate studies in hydrogeology, hydrology, engineering geology, waste management engineering

Selected Publications

California Groundwater Management, Second Edition, Groundwater Resources Association of California, co-author and project manager, 2005.

Water Contamination by Low Level Organic Waste Compounds in the Hydrologic System, in *Water Encyclopedia*, Wiley, 2004.

Potential Groundwater Quality Impacts Resulting from Geologic Carbon Sequestration, Water Research Foundation, co-author, 2009.

Aquifer Storage and Recovery in the US, ASR 9, American Ground Water Trust, Orlando Florida, September 2009 – a compilation of key ASR issues on DVD, contributing editor and speaker, 2010.

Sustainability From The Ground Up – Groundwater Management In California – A Framework, Association of California Water Agencies, principal author, 2011.

ISMAR9 Call to Action: Sustainable Groundwater Management Policy Directives, Principal Author, 2016.

EXHIBIT 10

REMY MOOSE MANLEY, LLP
HOWARD F. WILKINS III, SBN 203083
CHRISTOPHER L. STILES, SBN 280816
CHRISTINA L. BERGLUND, SBN 303865
555 Capitol Mall, Suite 800
Sacramento, CA 95814
Telephone: (916) 443-2745
Facsimile: (916) 443-9017
Email: cwilkins@rmmenvirolaw.com
cstiles@rmmenvirolaw.com
cberglund@rmmenvirolaw.com

Attorneys for Petitioner and Plaintiff
MARINA COAST WATER DISTRICT

EXEMPT FROM FILING FEES
[GOVERNMENT CODE § 6103]

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF MONTEREY

MARINA COAST WATER DISTRICT, AND DOES 1-100,

Petitioner and Plaintiff,

v.

COUNTY OF MONTEREY, COUNTY OF MONTEREY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH BUREAU, AND DOES 101-110,

Respondents and Defendants,

BILL ARMSTRONG, ARMSTRONG SANDHILL RANCH, LLC, AND RAMCO ENTERPRISES, L.P. AND DOES 111-120.

Real Parties in Interest.

Case No.: 18CV000816

PETITION FOR WRIT OF MANDATE AND COMPLAINT FOR INJUNCTIVE RELIEF

[California Environmental Quality Act, Public Resources Code, § 21000 et seq.; California Code of Civil Procedure, § 1094.5]

Dept.:

Judge assigned for all purposes:
Hon.

Filing Date of Action:

Petitioner and Plaintiff Marina Coast Water District ("Petitioner," "MCWD," or the "District") alleges as follows:

INTRODUCTION

1. This action challenges the decisions of the Respondent COUNTY OF MONTEREY ("County") by and through its HEALTH DEPARTMENT ENVIRONMENTAL HEALTH BUREAU ("EHB") (collectively "Respondents") to approve a Well Permit Application (Well Permit 17-12898 for Well ETS-20) on September 8, 2017, for construction and operation of a high-capacity agricultural well (the "Project") for Real Parties in Interest BILL ARMSTRONG, ARMSTRONG SANDHILL RANCH, LLC, and RAMCO ENTERPRISES, L.P. (collectively "Real Parties") without performance of environmental review as required by the California Environmental Quality Act ("CEQA"), Public Resources Code sections 21000 et seq., and the CEQA Guidelines, Title 14, California Code of Regulations section 15000 et seq.

2. The Project, as approved, will pump up to 2,500 gallons per minute ("gpm"), potentially more than 4,000 acre-feet per year ("AFY"), from the 900-foot aquifer of the critically overdrafted 180/400 Foot Aquifer Subbasin ("180/400 Subbasin") of the Salinas Valley Groundwater Basin ("SVGB"). The Monterey County Water Resources Agency ("MCWRA") has recommended a moratorium on pumping from the "900-foot" aquifer—the same aquifer the Project will pump from—due to concerns regarding the potential adverse groundwater impacts of increased pumping.

3. MCWD relies on groundwater from the 180/400 Subbasin and the adjoining Monterey Subbasin to supply municipal water service for over 33,000 residents in the Marina/Ord community. The Project will potentially pump more groundwater than MCWD uses to supply the entire Marina/Ord community.

4. MCWRA, MCWD, and others have made a concerted effort to reduce pumping from the 180/400 Subbasin and the Monterey Subbasin of the SVGB for the purpose of restoring water quality and protecting groundwater. MCWD and MCWRA have also expressly committed to work together on measures to protect the "900-foot" aquifer of 180/400 Subbasin and the Monterey Subbasin of the SVGB.

5. Despite these efforts and commitments, MCWD never received notice that the County was considering approval of the Project and was surprised to learn of the County's approval without compliance with CEQA.

6. Upon learning of the approval of the Project, MCWD consulted with its experts and submitted a letter to the County explaining that the County's approval of the Project—without mitigation and monitoring requirements—has the potential to adversely impact groundwater supplies and quality in the "900-foot" aquifer of the 180/400 Subbasin and the Monterey Subbasin of the SVGB. MCWD attached a letter from its expert hydrogeologist confirming these adverse environmental impacts and explaining the need to consider mitigation and monitoring prior to approving the Project. The letter requested that the County rescind its approval of the Project and work with MCWD on mitigation or alternatives to ensure groundwater resources are protected.

7. In approving the Project without conducting environmental review as required by CEQA, Respondents prejudicially abused their discretion and failed to proceed in the manner required by law, in violation of CEQA and the CEQA Guidelines. As a result of EHB's failure to conduct environmental review, Respondents made a decision without all of the information that they, responsible and trustee agencies, and the public needed to properly weigh the consequences of the County's approval of the Project. As a result of these failures, Respondents, responsible and trustee agencies, and the public were deprived of the opportunity to consider mitigation and alternatives that could have addressed the Project's adverse impacts.

8. MCWD seeks a writ of mandate and injunctive relief, vacating and setting aside the Project approval, and enjoining Real Parties from proceeding with the Project, on the grounds that Respondents violated CEQA and prejudicially abused their discretion when they approved the Project.

PARTIES

9. MCWD is a publicly owned county water district formed by the voters in 1960 to provide potable water service to all residential, commercial, industrial, environmental, and fire protection uses in the then unincorporated community of Marina. The City of Marina ("City") incorporated in 1975, but MCWD has remained a separate public agency. The District also provides potable water delivery and

wastewater conveyance services within the boundaries of the former Fort Ord Army Base, known as the Ord Community. MCWD is the sole provider of municipal water service for the over 33,000 residents in its Marina and Ord Community service areas, who rely on MCWD for their domestic drinking water. The District, as well as its residential and commercial customers, would be materially injured by the activities that were approved in the Project.

10. MCWD is unaware of the true names and capacities of Petitioners and Plaintiffs fictitiously named herein as Does 1 through 100, inclusive. MCWD is informed and believe, and thereon allege, that such fictitiously named Petitioners and Plaintiffs are beneficially interested in Respondents' compliance with its mandatory duties under CEQA and State law before approving the Project, and that such Petitioners and Plaintiffs have standing to be joined as Petitioners and Plaintiffs in this proceeding. MCWD will amend this Petition, with leave of the court if necessary, to allege the fictitiously named Petitioners' and Plaintiffs' true names and capacities when ascertained.

11. Respondent MONTEREY COUNTY is, and at all times mentioned herein was, a political subdivision of the State of California. The County with EHB is, and at all relevant times was, responsible for administering and carrying out its laws and all applicable federal and State laws, including CEQA, in considering well permit applications within the County.

12. MCWD is unaware of the true names and capacities of Respondents DOES 101 through 110, and sues such respondents by fictitious names. Petitioner is informed and believes, and on the basis of such information and belief, that the fictitiously named respondents are responsible for actions described in this Petition. When the true identities and capacities of these respondents have been determined, Petitioner will amend this Petition, with leave of the court, if necessary, to insert such identities and capacities.

13. The following entities are named as Real Parties in Interest pursuant to Section 21167.6.5, subdivision (a) of the Public Resources Code.

14. MCWD is informed and believes, and thereon alleges, that Real Party in Interest ARMSTRONG SANDHILL RANCH, LLC is, and at all times herein mentioned was, the applicant and/or agent for the Project.

15. MCWD is informed and believes, and thereon alleges, that Real Party in Interest BILL ARMSTRONG is, and at all times herein mentioned was, the property owner of the Project site.

16. MCWD is informed and believes, and thereon alleges, that Real Party in Interest and RAMCO ENTERPRISES, L.P. has an interest in the Project.

17. MCWD is unaware of the true names and capacities of Real Parties in Interest/ Respondents DOES 111 through 120, and sues such respondents by fictitious names. MCWD is informed and believes, and based on such information and belief, alleges that the fictitiously named real parties in interest are directly and materially affected by the actions described in this Petition. When the true identities and capacities of these real parties in interest have been determined, MCWD will amend this Petition, with leave of the court if necessary, to insert such identities and capacities.

JURISDICTION AND VENUE

18. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

19. This court has jurisdiction over the matters alleged in this Petition pursuant to Code of Civil Procedure section 1094.5 and Public Resources Code section 21168 and 21168.5. Alternatively, this Court has jurisdiction under Code of Civil Procedure section 1080 and Public Resources Code section 21168.5.

20. Venue for this action properly lies in the Superior Court for the State of California in and for the County of Monterey pursuant to section 349 of the Code of Civil Procedure. The Project is located within Monterey County.

STANDING

21. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

22. The County had mandatory duties to comply with CEQA before approving the Project.

23. MCWD is beneficially interested in the County's full compliance with CEQA before the County approves the Project.

24. MCWD has the right to enforce the mandatory duties imposed upon the County by law.

25. MCWD is a public agency charged with providing safe and reliable water service for residential, commercial, industrial, environmental, and fire protection uses. MCWD serves approximately 33,000 residents in its Marina and Ord Community service areas, who rely on MCWD for their domestic drinking water. The District currently pumps all of its water supply from groundwater wells in the SVGB including the aquifer the Project will pump from.

26. MCWD has a substantial interest in ensuring the Project's impacts are fully mitigated. Among other reasons, operation of this Project will adversely affect water supplies and water quality in the SVGB, impairing MCWD's water rights, contracts, and ability to provide essential public services.

27. MCWD entered into a recorded annexation agreement with the Monterey County Water Resources Agency, the City of Marina, the J.G. Armstrong Family, and RMC Lonestar: the Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands dated March 1996. The Annexation Agreement protects the groundwater resources of the SVGB. MCWD's rights under the Annexation Agreement would be materially impaired and harmed by the Project, which is located within the Marina Area Lands.

28. MCWD has standing to assert the claims alleged in this Petition because it is beneficially interested in this matter, as required by Code of Civil Procedure section 1086. MCWD has a direct and beneficial interest in the County's full compliance with CEQA and all other applicable laws with respect to this Project.

29. MCWD has no other plain, speedy, and adequate remedy in the ordinary course of law, and MCWD will suffer irreparable injury unless this Court issues the relief requested in this Petition.

EXHAUSTION OF ADMINISTRATIVE REMEDIES

30. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

31. MCWD received no notice that the County intended to approve the Project. MCWD is informed and believes that no public notice was issued for either the County's CEQA determination or for its decision to issue the well permit. The County provided no opportunity for MCWD or the public to comment on the Project. MCWD and the public, therefore, are excused from CEQA's exhaustion

requirements for lack of notice. (Pub. Resources Code, § 21177, subd. (e); see also *Defend Our Waterfront v. California State Lands Commission* (2015) 240 Cal.App.4th 570, 582–584.)

32. MCWD has exhausted all available administrative remedies.

STATUTE OF LIMITATIONS

33. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

34. On September 8, 2017, EHB issued a permit for the Project.

35. When an agency approves a project without first complying with CEQA, a petition challenging this determination must be filed 180 days after the agency's decision to carry out or approve the project, unless the agency has filed a notice of exemption with the State Clearinghouse or the County Clerk, which would trigger a 35-day statute of limitations. (Pub. Resources Code, § 21167; CEQA Guidelines, § 15112.) MCWD is informed and believes that the County did not post a notice of exemption for the Project or, alternatively, that any such notice was defective and did not meet the requirements of CEQA. Thus, this Petition is timely filed within the 180-day time frame set forth under CEQA.

NOTICE OF CEQA SUIT

36. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

37. On March 2, 2018, MCWD e-mailed and federal expressed a letter to the Monterey County Clerk, giving notice to Respondents of MCWD's intent to file this lawsuit on or before March 5, 2018, seeking to invalidate the County's approval of the Project. This letter satisfied Petitioner's duty under Public Resources Code section 21167.5.

FACTUAL ALLEGATIONS

38. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

A. Factual Background

39. MCWD relies on groundwater from the "900-foot" aquifer of the 180/400 Subbasin and the adjoining Monterey Subbasin of the SVGB to provide municipal water service to the Marina/Ord

community—which is dependent on MCWD to provide safe and reliable domestic water. As the sole provider of municipal water service for over 33,000 residents, MCWD extracts groundwater from the "900-foot" aquifer from several wells. MCWD pumps water from these wells and then delivers this water to MCWD's customers. The Project will pump groundwater from the same "900-foot" aquifer that MCWD's groundwater wells pump water to supply water to the Marina/Ord community.

40. The 180/400 Subbasin of the SVGB is not adjudicated, and it supplies water to a number of existing municipal, industrial, and agricultural users, including MCWD's 33,000 plus customers that depend on this Subbasin and adjoining Monterey Subbasin for their domestic water. MCWD and others have been taking steps to eliminate the long term overdraft condition of the SVGB.

41. As part of an effort to protect the groundwater for its 33,000 residents, the District entered into a recorded annexation agreement with MCWRA, the City of Marina, the J.G. Armstrong Family, and RMC Lonestar: the Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands dated March 1996. The Annexation Agreement protects the groundwater resources of the 180/400 Subbasin and the Monterey Subbasin of the SVGB.

42. As a party to the Annexation Agreement, the County committed to managing the 900-foot aquifer to "provide safe, sustained use of the water resource, and to preserve to MCWD the continued availability of water from the 900-foot aquifer." MCWD and the County also committed to work together on measures to protect the "900-foot aquifer."

B. County's Approval of Project Two Days after Receiving Well Permit Application Without Notice or CEQA Review

43. On September 6, 2017, the County received a well permit application for the Project.

44. The Project proposed the drilling and operation of a high-capacity well on property located at 14995 Del Monte Boulevard in Marina, California (APN 175-011-050-000) agricultural irrigation. The Project will draw water from the "900-foot" aquifer of the SVGB at a rate of up to 2,500 gallons per minute, which amounts to more than 4,000 AFY.

45. As part of the well application review, MCWRA's hydrologist made a conclusory finding without citation to any facts or analysis that the well did not "indicate potential for significant adverse impact to existing domestic wells, water system wells, or in-stream flows based on an assessment using

regional aquifer parameters."

46. On September 8, 2017, two days after receiving the application for the Project, the County approved the Project without any public notice, notice to MCWD, or performance of environmental review as required by CEQA. The County's approval did not include any mitigation or monitoring requirements.

C. CEQA Applies to the County's Approval of the Project

47. As a first step in the CEQA process, agencies must conduct a preliminary review in order to determine whether CEQA applies to a proposed activity. As part of this review, the agency is to determine whether the activity is a "project" for purposes of CEQA, and if it is, whether it falls under an exemption. (See e.g., *Sierra Club v. County of Sonoma* (2017) 11 Cal.App.5th 11, 19.)

48. CEQA applies to "discretionary projects proposed to be carried out or approved by public agencies." (Pub. Resources Code, § 21080, subd. (a).) A permit is "discretionary," and thus subject to CEQA, if the decision-maker has discretion to modify (or deny) the project or impose conditions on the permit that would mitigate any potential environmental impacts in a meaningful way. (See *Mountain Lion Foundation v. Fish & Game Com.* (1997) 16 Cal.4th 105, 117; *Central Basin Municipal Water Dist. v. Water Replenishment Dist. of Southern California* (2012) 211 Cal.App.4th 943, 949.)

49. Monterey County's "well program" codified in Chapter 15.08 of the Monterey County Code provides the County's Health Officer with ample discretion to deny or modify a well permit to address environmental concerns. Nothing in the ordinance requires that permits be approved, if any specified conditions or standards are satisfied. (See Section 15.08.060 – Permit—Issuance or denial.) The ordinance specifically provides the Health Officer with discretion to "condition the permit in any manner he or she deems necessary to carry out the purposes of this Chapter." (*Ibid.*) The ordinance further states that the Health Officer "shall deny an application for a permit if, *in his or her judgment*, its issuance would tend to defeat the purposes of this Chapter," which as stated is to ensure "that the groundwater of this County will not be polluted or contaminated and that water obtained from such wells will be suitable for the purpose for which used and will not jeopardize the health, safety or welfare of the people of this County." (Section 15.08.010 – Purpose, italics added.) Thus, the ordinance allows

the Health Officer to use his or her judgment to determine whether a permit should be conditioned or even denied if there is environmental harm (e.g., groundwater pollution, water supply issues), and what type of conditions to impose in a particular circumstance, if any.

50. As part of the well application review, a MCWRA hydrologist made a conclusory finding without citation to any facts or analysis that the well did not "indicate potential for significant adverse impact to existing domestic wells, water system wells, or in-stream flows based on an assessment using regional aquifer parameters." While this assessment conflicts with the County's conclusions in MCWRA's own "Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin," the assessment lends further support to the conclusion that issuance of Well Permit 17-12898 is a discretionary action.

51. Furthermore, numerous other ordinances, regulations, and statutes provide the County with discretion and authority to regulate this well, including but not limited to Monterey County Water Resources Agency Act; the 2010 Monterey County General Plan Agency, Policy PS-3.5; and Sustainable Groundwater Management Act. The County was required to consider these authorities during the County's environmental review of the Project.

52. The County provided no notice or information to MCWD or the public related to its consideration or approval of the Project.

53. Upon learning of the County's approval of the Project, MCWD submitted a letter to the County alerting the County that its approval of the Project was discretionary and therefore environmental review must be performed. The letter explained that the Project has the potential to significantly impact water quality and water supplies in the SVGB and MCWD's wells. The letter further noted that the County's own reports provide ample evidence that the Project has the potential to significantly impact water quality and water supplies in the SVGB and MCWD's wells.

54. Specifically, the letter noted that MCWRA's recent publication "Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin" determined the need for an "immediate moratorium on groundwater extractions from new wells within the entirety of the Deep Aquifers of the 180/400 Foot Aquifer and Monterey Subbasins" based on its concerns that

additional pumping from the "900-foot" aquifer has the potential to induce additional leakage from overlying aquifers and the potential to exacerbate seawater intrusion.

55. MCWD also explained the County was in possession of ample information prior to its approval of the Project demonstrating that the approval of the well could significantly impact groundwater supplies and quality in the SVGB. Specifically, the County was aware that California Department of Water Resources identified the 180/400 Subbasin as critically overdrafted in January of 2016. The County was also aware that MCWRA's "State of the Salinas River Groundwater Basin," determined that existing pumping from the SVGB was not sustainable and recommended pumping reductions. Additionally, the County was aware that MCWRA's Report entitled "Protective Elevations to Control Seawater Intrusion in the Salinas Valley," explained the need for additional groundwater management projects to reduce coastal area pumping. MCWD's letter noted that this substantial evidence demonstrated the County was required to perform environmental review pursuant to CEQA prior to approving the Project.

56. MCWD's letter was accompanied by expert evidence from MCWD's hydrogeologist explaining that the Project had the potential to adversely impact groundwater in the 180/400 Subbasin and the adjoining Monterey Subbasin and MCWD's wells, both directly and cumulatively, unless enforceable mitigation measures are made conditions of the County's approval.

57. MCWD's letter then requested the County rescind its approval of Well Permit 17-12898 until such time as the County has performed adequate CEQA analysis of the significant environmental effects that may result from the construction and operation of Project—including, at a minimum, the potential degradation of groundwater quality and water supply issues in the "900-foot" aquifer.

58. Respondents' approval of the Project is a discretionary approval subject to CEQA. No CEQA exemptions apply to the Project.

FIRST CAUSE OF ACTION
Violations of CEQA (Public Resources Code, § 21000 et seq.)

59. MCWD re-alleges and incorporates by reference the preceding paragraphs in their entirety.

60. CEQA applies to discretionary projects that are undertaken, funded, or approved by

public agencies.

61. Respondents prejudicially abused their discretion and failed to act in the manner required by law in failing to conduct any environmental review prior to approving the Project.

62. Respondents prejudicially abused their discretion and failed to act in the manner required by law by failing to support its conclusion that the Project did not "indicate potential for significant adverse impact to existing domestic wells, water system wells, or in-stream flows based on an assessment using regional aquifer parameters" with substantial evidence.

63. Respondents prejudicially abused their discretion in approving the Project because Respondents' approval of the Project may result in one or more significant effects on the environment. Substantial evidence demonstrates that, at a minimum, Respondents failed to adequately disclose, evaluate, or mitigate the Project's direct, indirect, and cumulative impacts on groundwater.

64. Respondents prejudicially abused their discretion and failed to act in the manner required by law in failing to make the findings required by CEQA prior to the approval of the Project.

65. Respondents prejudicially abused their discretion and failed to act in the manner required by law by approving a Project in a manner that does not comply with the requirements of CEQA.

66. As a result of the foregoing defects, Respondents' approval of the Project is contrary to law, invalid, and must be set aside.

67. Petitioner has no plain, speedy, or adequate remedy in the course of ordinary law unless this court grants the requested writ of mandate to require the County to set aside their approval of the Project. In the absence of such remedies, Respondents' decision will remain in effect in violation of State law and Petitioner will be irreparably harmed. No money damages or legal remedy could adequately compensate Petitioner for that harm.

PRAYER FOR RELIEF

Wherefore, Petitioner prays for judgment against Respondents as follows:

1. For a temporary stay, temporary restraining order, and preliminary and permanent injunctions restraining the County and its agents, employees, officers and representatives from taking other actions in furtherance of the Project pending full compliance with the requirements of CEQA, the

CEQA Guidelines, and all other applicable laws.

2. For a peremptory writ of mandate commanding the County to vacate and set aside in its entirety the decision to approve the permit allowing the construction and operation of the Project.

3. For a peremptory writ of mandate directing the County to comply with the requirements of CEQA, the CEQA Guidelines, and all other applicable laws and regulations before taking any further action in furtherance of the Project.

4. For a temporary stay, temporary restraining order, and preliminary and permanent injunctions restraining the Real Parties in Interest and the County and its agents, servants, and employees, and all others acting in concert with Real Parties or on their behalf, from taking any action to further implement the Project, pending full compliance with the requirements of CEQA, the CEQA Guidelines, and all other applicable laws.

5. For an award of reasonable attorneys' fees and costs in this action.

6. For such other and further relief that the Court deems just and proper.

Dated: March 5, 2018

REMY MOOSE MANLEY, LLP

By: _____
Howard F. Wilkins III

Attorneys for Petitioner
MARINA COAST WATER DISTRICT