APPENDIX A

DRAFT CRITERIA FOR EVALUATING WATER TRANSFER THROUGH FACILITIES OF THE STATE WATER PROJECT

Draft

Date

Address of Requestor

Dear Requestor:

This is in response to your recent contact with the Department of Water Resources concerning the use of State Water Project facilities to convey transfer water. The source of this water would be from .....

The purpose of this letter is to 1) explain how the Department evaluates water transfer proposals involving the use of SWP facilities; 2) request specific written information needed to evaluate your proposal; 3) transmit a letter agreement providing for reimbursement to the Department for staff time spent reviewing your proposal; and 4) provide for your review typical wheeling agreements for use of SWP facilities to convey non-SWP water.

Evaluation of Water Transfer Proposals

The Department carefully evaluates water transfer proposals that require the use of SWP facilities for conveyance on a case-by-case basis to ensure that they meet the following criteria:

1. All proposals must contain the background information requested in this letter.

2. All technical and historical water use information submitted to the Department must be in accordance with generally accepted engineering practices.

3. The use of SWP facilities for conveyance is subject to the availability of unused capacity as determined by the Department after considering operational restrictions and the priority and use by other agencies.

4. Water conveyed in SWP facilities must be covered by a valid water right or entitlement recognized under California law. This right or entitlement must allow transfers to occur as proposed. In addition, any changes in the water rights, point of diversion, place of use, or purpose of use required to facilitate the conveyance of water under post-1914 water rights must be approved by the State Water Resources Control Board prior to the use of SWP facilities. Further, all transfer proposals shall demonstrate to the satisfaction of the Department that no injury will occur to vested water right holders as a result of changes in point of diversion,

place of use, or purpose of use required to facilitate the conveyance of transfer water through SWP facilities.

5. The conveyance of water must be in compliance with applicable federal and state laws, including but not limited to applicable environmental requirements included in the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), and the Federal Endangered Species Act (FESA). Compliance with these laws is required prior to the Department's approval of the use of facilities.

6. The conveyance of water must not violate existing contracts.

7. The November 24, 1986 Coordinated Operation Agreement between the U.S. Bureau of Reclamation (Bureau) and the Department establishes certain rights and obligations of those agencies with respect to the operation of the SWP and the Central Valley Project (CVP). Proposals involving the export of non-SWP water through SWP facilities will require both Department and Bureau approval.

8. All non-SWP water transferred through SWP facilities must be "transferrable." For purposes of evaluating requests, transferrable water includes groundwater transferred without adverse impacts; that quantity of surface water that has historically been consumptively used under an established legal water right or entitlement recognized under California law; and water that would not otherwise be available to the SWP, CVP or any other legal water users in the absence of the proposed transfer.

9. Groundwater transfers must not conflict with Water Code Section 1220 and must not cause any adverse impacts including impacts on water quality, stream flows or overlying wetlands. Verification of groundwater quality as well as documentation demonstrating that groundwater wells are not pumping underflow of interconnected surface streams must be provided.

10. Water considered for transfer under a fallowing, crop shifting or conservation arrangement must be limited to the quantity of water that would have been consumptively used or irretrievably lost to beneficial use absent the proposed action. Crop consumptive use is the total evapotranspiration of water minus effective precipitation and does not include transportation losses, return flow, leaching, frost protection or deep percolation to a usable groundwater aquifer or basin. Water

irretrievably lost to beneficial use is water that runs into the ocean or saline water body or through deep percolation to an unusable groundwater aquifer (e.g., a saline sink or a groundwater aquifer that is polluted to the degree that water cannot be directly used).

11. The transferor must satisfactorily demonstrate to the Department, so the Department can make a written finding in accordance with Water Code Sections 1810(d) and 1813, that the use of SWP conveyance facilities will not injure any legal user of water and will not unreasonably affect fish, wildlife, or other instream beneficial uses and will not unreasonably affect the overall economy or the environment of the county from which the water is being transferred. Further, the Department is not obligated to deliver transfer water at times and in quantities which will adversely impact the efforts of the SWP or CVP to meet any applicable provisions of State or federal law, or reduce the quantity or quality of the SWP or CVP water available for export as determined by the Department and appropriate under existing law and present contract provisions.

12. Groundwater pumping and releases of stored water must be measured and recorded at points and by methods mutually agreed to by the water right holder and the Department. All costs associated with installing and maintaining acceptable measurement devices are the responsibility of the water right holder or the transferee.

13. All proposals involving groundwater substitution arrangements for longer than one year must include a comprehensive groundwater basin study or evaluation of groundwater supplies acceptable to the Department. This is to ensure there will be no significant long-term adverse impact on groundwater conditions, water quality, inter-related surface streams, land subsidence or other groundwater supplies within the service area where the groundwater is being pumped. Alternatively, a comprehensive evaluation of the potential impact on groundwater supplies may be prepared and accompanied by an acceptable adopted groundwater management plan.

14. Transferrable water which crosses the Delta for export shall be required to contribute an appropriate share of that water as determined by the Department to meet requirements of any Delta water quality plans or policies in effect at the time. The Department also reserves the right to assess a small allowance for conveyance losses of water transported through all SWP facilities.

15. Transfers to non-SWP agencies must have no demonstrable adverse impact on the SWP.

Information Needed to Evaluate Proposal

The following information must be provided in writing to the Department at the time the transfer proposal is presented. Additional information may be required later.

1. Name and location of individual or entity having the legal right to transferrable water.

2. Name and location of proposed recipient of transferrable water.

3. Claim of right to the water being transferred (i.e., pre-1914 water right, post-1914 water right, groundwater, other). Documentation supporting claim of right to the use of the transferrable water during the time of year and water year type the water is to be transferred.

4. Complete written description of the proposal for use of SWP facilities including the points of diversion and delivery, the period for use of SWP facilities, the quantity of transferrable water involved, and the proposed schedule for delivery.

5. Detailed information documenting that the water is "transferrable." At a minimum, the following information must be provided.

   a. For transfer proposals involving direct diversions, ten years of historical water use records must be provided documenting the quantity of water diverted, the rate of diversion, the season of diversion, and the purpose and place of use. The proposal must identify the operational change under which transferrable water will be made available.

   b. If the source of water is from storage, information must be provided to show that the water is previously stored water that would not otherwise be released at the time of transfer. Stored water released for conveyance in SWP facilities must be in addition to the quantities of stored water normally released under historical and projected reservoir operations. Information must be provided for the last ten years to show monthly historical releases and storage levels. For the year of the transfer, operation studies

should show projected monthly releases and reservoir storage levels with and without the transfer. Refill agreements (i.e., refill criteria) for future reservoir operations will be required on all proposals involving storage withdrawals, providing protection to the SWP and CVP against water supply impacts in future years resulting from the proposed transfer.

c. If groundwater is the source of water, the following information must be provided.

1. Location map of groundwater wells to be utilized.

2. Drillers log or electric log for each groundwater well being utilized.

3. Documentation and identification of areas normally irrigated by wells involved in the transfer and those of surrounding neighbors within at least a one-mile radius.

4. Documentation showing any anticipated near-term and long-term changes in groundwater conditions, and how these changes might impact surface streams, water quality, land subsidence, and other groundwater users in the area.

d. If water is to be derived from a fallowing or crop shifting arrangement, the following information must initially be provided. Additional information may be requested on a case-by-case basis.

1. USGS 7 ½ minute quad or other appropriate maps clearly showing the boundaries of the farms and the fields to be included in the program, the location and type of surface water diversions and/or wells and a description of how the water is applied to the fields.

2. Verification of the net acres of each field to be included in the program. Submit ASCS maps, if available.

3. Acres fallowed as part of normal rotation or crop set aside program. (Fallowing this acreage will not be considered as making water available for transfer.)

4. Historical cropping data for 10 years for acreage to be fallowed as well as other agricultural holdings operated by the seller. Information on other agricultural operations is important to insure that crops fallowed on acreage included in the transfer proposal are not shifted to other holdings.

5. Identification and documentation of crops and total number of acres being fallowed (explain any differences between current and historical cropping pattern and historical mix).

6. Identification and documentation of consumptive use of the crops fallowed along with a detailed consumptive use analysis, demonstrating how the quantity of water was calculated.

7. Irrigation method and frequency.

8. Documentation of depth to groundwater in areas to be fallowed.

9. Proposed method to manage fallowed land to prevent plant and weed growth.

e. If the source of the transferrable water is from conservation, the following must be provided:

1. Identification and detailed description of the method of conservation to be used.

2. Detailed documentation demonstrating the amount of transferrable water derived from the identified conservation measures.

3. Existing use of drainage water.

6. Explain and provide applicable documentation to show that requirements of the CEQA, CESA, NEPA and FESA have been or will be met.

7. If the transfer would need a change in the terms of a water right permit or license, provide applicable documentation to show that the State Water Resources Control Board's approval has been obtained.

Letter Agreement

The party requesting the use of SWP facilities must agree in writing to reimburse the Department for all costs incurred in reviewing, evaluating, and processing each proposal for use of SWP facilities and pay a deposit to cover these costs (See attached Fee Schedule). Following approval or denial of the proposal, the party will be refunded any remaining deposit or, if necessary, billed for any additional administrative costs incurred in processing the proposal. The collection of a deposit by the Department does not guarantee the use of SWP facilities for the proposed transfer.

In some cases, the Department may determine that the Bureau, the State Department of Fish and Game, or some other agency must also evaluate the proposal. If other agencies are required to provide comprehensive reviews of the proposal and request compensation for that evaluation, the costs of each reviewing agency shall be paid directly by the party requesting the use of SWP facilities.

Enclosed you will find a letter agreement with provisions that provide for a reimbursement to the Department for costs associated with reviewing the proposed transfer and use of SWP facilities. To start the review process, please return a signed copy of the executed agreement along with a resolution or other documents indicating the person signing the contract has the authority to do so. The signed contract must be accompanied by a detailed description of the proposal providing the information described herein along with a deposit in the amount shown in the attached Fee Schedule.

Wheeling Agreement

Once the Department has reviewed and approved the proposed transfer, a wheeling agreement must be executed with the Department describing terms and conditions for transporting the water to the transferee. This agreement, which will require a one-time, non-refundable preparation charge (see attached Fee Schedule) will specify the terms and conditions of the transfer. Each transfer will require a

separate wheeling agreement based on a case-by-case determination of conveyance terms and conditions. Copies of typical wheeling agreements for conveying transfer water to SWP and non-SWP agencies are enclosed.

Please call me at (916) 653-4313 or Scott Jercich of my staff at (916) 653-4547 if you have questions.

Sincerely,

Donald R. Long, Chief
State Water Project Analysis Office

Enclosures

Appendix B

Notice of Preparation and Responses

Stanislaus County

Department of Planning and Community Development

1100 H STREET MODESTO, CALIFORNIA 95354

PHONE: (209) 525-6330
FAX: (209) 525-5911

To: All Interested Parties

From: Kirk Ford, Environmental Coordinator K.F.

Subject: Diablo Grande Water Plan
Notice of Preparation of a Supplemental Environmental Impact Report
Scoping Meeting

Date: March 5, 1997

Diablo Grande is a 29,000 acre planned resort community located approximately 8 miles west of Patterson, in Stanislaus County, California. The project was approved by Stanislaus County Board of Supervisors in October of 1993 and some non-residential portions of the project have been constructed. In February 1997, a judgement by Stanislaus County Superior Court required that the County *"void the certification of the EIR and to set aside"* existing approvals of the project until the environmental effects of providing a long-term water supply to the project were addressed. The court required that no additional construction (with some specific exceptions) occur on the project site until the water issue is satisfactorily resolved.

Diablo Grande submitted a Water Plan to the County, also in February 1997, describing eight optional sources of water for the project. In compliance with the California Environmental Quality Act (CEQA), and in response to Superior Court orders, Stanislaus County will prepare a Supplemental Environmental Impact Report (SEIR) to examine the environmental effects of implementing Diablo Grande's proposed Water Plan.

In compliance with CEQA guidelines [Article 7, 15084(d)(3)], the County, as Lead Agency, has elected to allow Diablo Grande to have their consultant (EMC Planning Group, Inc. of Monterey) provide the County with an Administrative Draft of the SEIR. Following receipt of the Administrative Draft, and prior to public release of the document, the County will conduct an independent review and analysis of the document to ensure that the released version wholly reflects the independent judgement of the County.

Once the SEIR process has been completed, Stanislaus County Planning Commission and Board of Supervisors will once again be asked to re-approve the Diablo Grande project, including Certification of the EIR and adoption of General Plan Amendments, Specific Plan, and Phase 1 Preliminary Development Plan.

The attached ***Notice of Preparation*** is provided specifically to solicit your comments regarding the contents of the proposed Diablo Grande Water Plan SEIR and the issues you feel should be addressed in the document. You have been selected to receive a copy of the Notice of Preparation because:

a) You are a "Responsible Agency" under CEQA, including Water Districts, Irrigation Districts, Municipalities or Counties potentially effected by one or more of the proposed alternative water sources;
b) You are a landowner with property adjacent to the project site or one of the proposed alternative water sources (specifically the Del Puerto Canyon wells.); or
c) You commented on the original Draft EIR released in 1992.

You have 30 days to respond to the Notice of Preparation. Additional public comment will be solicited once the draft SEIR is completed and circulated.

Comments made identifying potential impacts should be as specific as possible, and should be based on supporting data (e.g. traffic counts, expected pollutant levels etc.). Your comments should emphasize potential impacts in areas which you or your agency has expertise and/or jurisdictional responsibilities.

Effective January 1, 1989, State Law requires a monitoring program for the implementation of all mitigation measures. Therefore, any suggested mitigations must be accompanied by your agencies monitoring program. At a minimum, the program for each mitigation measure should include details of 1) how the required action will be guaranteed, 2) when monitoring will occur, 3) who will do the monitoring and 4) qualification of the responsible person(s). This program will be included in the project recommendations which are considered by the Planning Commission and is subject to public review at all times.

We have scheduled a scoping meeting in order to allow all interested parties to provide comment. Your may submit either written or verbal comments, or both.

SCOPING MEETING
Diablo Grande Water Plan Supplemental EIR
1PM; Wednesday, April 2, 1997
Board of Supervisors Chambers
Second Floor, Stanislaus County Administration Building
1100 H Street
Modesto, California 95354

PLEASE CALL BY MONDAY, MARCH 31 TO CONFIRM YOUR ATTENDANCE
(209)525-6330

Please submit written comments to:

Kirk Ford, Environmental Coordinator
Stanislaus County Department of Planning & Community Development
1100 H St.
Modesto, California 95354

no later than Monday, April 7, 1997

Please call me at (209) 525-6330 if you have any questions or comments. Please also notify us if you wish to be removed from our mailing list. Thank you for your assistance.

TO: Stanislaus County Planning & Community Development
1100 "H" Street
Modesto, CA 95354

FROM: _____

REGARDING ENVIRONMENTAL REVIEW COMMENTS:

PROJECT TITLE: Diablo Grande Water Plan Supplemental EIR
APPLICATION NO. N/A
PROJECT DESCRIPTION: Attached

Based on this agencies particular field(s) of expertise, it is our position the above described project:

___ Will not have a significant effect on the environment.
___ May have a significant effect on the environment.
___ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) - (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts:

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

_____

_____

Response prepared by:

_____

Name Title Date

Stanislaus County

Department of Planning and Community Development

1100 H STREET MODESTO, CALIFORNIA 95354

PHONE: (209) 525-6330
FAX: (209) 525-5911

NOTICE OF PREPARATION

To:	Office of Planning and Research 1400 Tenth Street Sacramento, California 95814
From:	Stanislaus County Department of Planning and Community Development 1100 H Street Modesto, California 95354
Subject:	Notice of Preparation for Draft Supplemental Environmental Impact Report
Project Title:	Diablo Grande Specific Plan and Phase 1 Preliminary Development Plan: Water Resources Plan
Project Applicant:	Diablo Grande Limited Partnership

Stanislaus County will be the lead agency and will prepare a supplemental environmental impact report (EIR) for the project identified above. We need to know the views of all responsible agencies as to the scope and content of the environmental information which is germane to each agency's statutory responsibilities in connection with the proposed project. All responsible agencies will need to use the EIR prepared by our agency when considering their permit or other approval for the proposed project. In addition, we would like to receive input from non-responsible agencies and individuals receiving this notice regarding the scope and content of the supplemental EIR.

The original project included 1993 approvals of General Plan Amendments, Rezoning applications, Williamson Act cancellation, and others. Stanislaus County Superior Court Judge Vander Wall has commanded that the County "*void the certification of the EIR and to set aside your 1993 approvals of the Diablo Grande project including rezoning, the Phase 1 Preliminary Development Plan, Stanislaus County General Plan Amendments, and adoption of the Diablo Grande Specific Plan.*" According to the judgment, the County may again consider approval of the Diablo Grande project only after preparation and certification of additional EIR analysis of long-term water supply.

The project description, location, and probable environmental effects are contained in the attached materials. Information about the anticipated environmental effects of the project is attached. Due to the time limits mandated by state law, your responses must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

Copies of the original project Draft EIR, Final EIR, Findings, Mitigation Plans, Specific Plan and other documents are available for review at the following public locations:

Modesto Public Library - 1500 I Street, Modesto 95354 (209) 558-7800;
Newman Public Library - 1305 Kern Street, Newman, 95360 (209) 862-2010;
Patterson Public Library - 46 North Salado, Patterson 95363 (209) 892-6473; and
Stanislaus County Planning Department - 1100 H Street, Modesto, CA 95354 (209) 525-6330.

In compliance with CEQA Guidelines [Article 7, 15084(d)(3)], the County, as Lead Agency, has elected to allow Diablo Grande to have their Consultant (EMC Planning Group Inc. of Monterey) provide the County with an Administrative Draft of the Supplemental EIR. Following receipt of the Administrative Draft, and prior to public release of the document, the County will Conduct an independent review and analysis of the document to ensure that the released version wholly reflects the independent judgment of the County.

Please send your written responses to Kirk Ford, Senior Planner, Stanislaus County Planning Department, 1100 H Street, Modesto, California 95354. We will need the name of a contact person in your agency.

Notice of Public Scoping Meeting

The lead agency will hold a public scoping meeting to receive public comment on the scope and content of the Supplemental EIR. The meeting will be held at:

Stanislaus County Administration Building
Board of Supervisors Chambers
1100 H Street, second floor
Modesto, California 95354

The meeting will be held Wednesday April 2, 1997 at 1:00 PM. Participants are encouraged to provide written comments to ensure that concerns are understood and addressed. Participants may submit either written or verbal statements, or both.

□

Signature

Senior Planner
Title

(209) 525-6330
Telephone

March 5, 1997
Date

□

Project Description□

Diablo Grande is a 29,500 acre planned destination resort and residential community located in southwestern Stanislaus County, seven miles west of Interstate 5. Diablo Grande will include scenic open spaces, a wilderness conservation area, six golf courses, swim and tennis facilities, a hotel and executive conference center, a winery, vineyards, research campus, municipal facilities, town center, shops and offices, and 5,000 dwelling units in five villages.

Stanislaus County approved a Specific Plan and environmental impact report (EIR) for the project in 1993. The EIR included a tiered water analysis. There was a detailed analysis of the supply for the first five years of the project from a well site located on the valley floor, near the City of Patterson, and a general discussion of possible long-term sources with a more specific discussion to be tiered in later environmental documentation.

The Fifth District Appellate Court found the Diablo Grande Specific Plan EIR sufficient in all respects with the exception of the discussion of long-term water sources.

In response to this decision, the applicant has prepared the attached Water Resources Plan, which contains a general overview of sources and transfer prospects and a more detailed discussion of several long-term water supply sources for the Diablo Grande project. This Plan constitutes the portion of the project description for the Diablo Grande EIR having to do with water supply and is incorporated herein by reference.

Based on the Court's decision, the Supplemental EIR will be focused on the environmental effects associated with each of the water supply options considered in the Water Resources Plan. The Court directed the County to attempt in good faith to fulfill its obligation under CEQA to provide sufficient meaningful information regarding the types of activity and environmental effects that are reasonably foreseeable from the supply of water to the project. Since any of the water supply options addressed in the Water Resources Plan could be implemented, the Supplemental EIR will evaluate the impacts associated with maximum use of each option.

We would like to receive input relating to responsible agency's area of expertise concerning the overall approach proposed for the Supplemental EIR as well as concerning each water supply option within each agency's jurisdiction. The following table illustrates the areas of environmental concern we anticipate will be raised by each alternative. Following is a brief discussion of the anticipated areas of impact of each alternative. Please indicate for each alternative relating to your agency's area of expertise any additional areas you feel should be addressed and any specific comments you may have concerning issues you feel should be analyzed in the Supplemental EIR. In your response, please also identify all options for which your agency qualifies as a responsible agency. We would also like to receive input from other agencies and individuals receiving this NOP regarding issues that you feel should be addressed in the Supplemental EIR.

Finally, if you feel that substantial changes have occurred with respect to the other portions of the EIR, please take this opportunity to raise such concerns so they may be considered in the Supplemental EIR.

Anticipated Areas of Environmental Effect

Option 1 - Marshall Davis Farms

The Diablo Grande EIR evaluated pumping of up to 1,200 acre-feet of groundwater per year from the Marshall-Davis Farms property (See Water Resources Plan, Figure 2) for non-residential uses at Diablo Grande from 1996 to 2000. The EIR included a groundwater study performed for the City of Patterson by Bookman-Edmonston Engineering, Inc. in 1991, which concluded that up to about 20,000 acre-feet of water per year could be taken from the aquifer below the Marshall-Davis Farms and vicinity with no significant impact to water supplies of the area. The environmental effects of this option were evaluated in the Diablo Grande EIR and this water supply is currently in use. The analysis included in the Diablo Grande EIR will be summarized in the Supplemental EIR.

Option 2 - Project Area Groundwater

This option involves pumping of up to 2,500 acre-feet per year of groundwater from wells located on-site and installation of water lines to the areas of development. Anticipated areas of impact associated with the proposed groundwater pumping include effects on agricultural land, groundwater resources, vegetation and wildlife, water quality and water supply. Area of potential effect associated with the new water lines include impacts to biotic and archaeological resources.

Option 3 - Algal Turf Scrubber

This option involves running effluent (including secondarily treated sanitary wastewater) over a sloping runway at low flows and shallow depths to create an environment in which algae will grow and thrive on the constituents in the water. The water at the end of the ATS will be of a quality which will allow its discharge into natural and man-made water courses for blending with other supplies.

The City of Patterson conducted an initial study evaluating the impacts of constructing an ATS facility at the City Wastewater Treatment Plan, discharging the treated effluent into the San Joaquin River and diversion of an equal amount of water from the River for use at Diablo Grande. Approximately 1,000 acre-feet of water per year will be available from the City of Patterson for the Diablo Grande project, with an increase to 3,000 acre-feet per year as the City of Patterson grows.

The information contained in the initial study prepared by the City of Patterson will be included in the Supplemental EIR.

In addition, this option includes construction of an ATS facility at the Ceres Wastewater Treatment Plant and/or the Modesto Wastewater Treatment Plant. These facilities would include a pumping plant, a pipeline from the Plant to the San Joaquin River, a diversion facility on the river and a pipeline to the Western Hills Water District's existing pipeline in Marshall Road (Water Resources Plan, Figures 4 and 5).

The Supplemental EIR will evaluate impacts associated with these options. Anticipated areas of concern include potential geologic and seismic effects and effects on agricultural land, biotic resources and archaeological resources from construction of the pipelines, pumping infrastructure and diversion facilities, impacts to water quality and quantity and biotic resources in the San Joaquin River and potential growth inducement through expansion of treatment plant capacity.

Option 4 - Shallow County Groundwater

Under this option, excess groundwater under farmlands in western Stanislaus County on either the west or east side of the San Joaquin River would be extracted and transported through either existing or newly constructed canals or pipelines to the existing Diablo Grande pipeline at the Marshall-Davis Farms (See Water Resource Plan, Figure 6). If extraction takes place east of the San Joaquin River, a river crossing will be necessary, most likely in a tunnel under the main channel. This option could supply the entire 12,000 acre-feet of the long term supply required by Diablo Grande.

Anticipated areas of environmental impact include potentially beneficial impacts to agricultural activities, flooding and drainage in the areas of groundwater pumping, potential growth inducing impacts, geologic and seismic conditions relating to new canals and pipelines, effects on biotic resources and archaeological resources relating to construction of new canals and pipelines, and water quality issues.

Option 5 - Berenda Mesa Water District (BMWD)

Under this option, the WHWD would acquire some of BMWD's water entitlement, delivery of the water to the Diablo Grande main supply line at its crossing of the California Aqueduct and construction of a turnout at the crossing. The WHWD would acquire an entitlement twice or more the demands of the Diablo Grande project (12,000 acre-feet per year) to ensure the full need of the project can be met even during dry years. Alternative back-up supplied would be required and storage of extra wet year water would be necessary.

Anticipated areas of environmental concern include impacts associated with construction of the turnout to biotic and archaeological resources and geologic/seismic conditions. Impacts associated with the transfer of BMWD water were addressed in the certified EIR prepared for the transfer (the Monterey Principles EIR). This document will be incorporated by reference in the Supplemental EIR.

Option 6 - Mercy Springs Water District (MSWD)

Under this option, the WHWD would purchase all or a portion of the 13,300 acre-feet of water and/or 3,390 acres of land in the MSWD. Water acquired would be diverted from the Delta-Mendota Canal at the crossing of the Diablo Grande pipeline from the Marshall-Davis Farms. New construction would be limited to installation of an additional pipeline between the Canal and the existing 30-inch pipeline at the California Aqueduct and a new turnout from the Delta-Mendota Canal.

Anticipated areas of impacts include those associated with installation of the new pipeline and new turnout (geologic/seismic impacts, biotic and archaeological resources) and effects associated with potential land use changes within the MSWD such as land fallowing and growth inducement.

Option 7 - Oakwood Lake Water District

Under this option, groundwater discharged from the Manteca Water Slides would be sold to WHWD and transported to Diablo Grande by pumping at the banks Pumping Plant and wheeling the water in the California Aqueduct to a new turnout at the Oak Flat Road. The water supply wheeling would be limited by other priority uses and pumping restrictions because of endangered fish in the Delta. With regulation, up to 5,700 acre-feet per year could be supplied to WHWD.

Anticipated areas of impact include those associated with construction of the turnout (geologic/seismic impacts, biotic and archaeological resources) and with respect to water quality and quantity in the San Joaquin River and biotic resources in the River.

Option 8 - Bravo Management Company (BMC)

Under this option, the WHWD would purchase 2,000 acre-feet per year from the BMC. BMC would provide this amount of water to the Kern County Water Agency, which would release a portion of its State Water Project entitlement water to WHWD in the California Aqueduct at Oak Flat Road. BMC would provide water from a portion of its supply already banked in groundwater storage available to the KCWA and by pumping groundwater from a basin east of the City of Bakersfield in which BMC has a 99 percent interest.

Anticipated areas of impact include those associated with construction of the turnout (geologic/seismic impacts, biotic and archaeological resources) and with respect to land uses within the BMC within which less water would be available after the sale such as growth inducement.

DIABLO GRANDE -WATER RESOURCES PLAN March 1997

Anticipated Areas of Environmental Effect

WATER SOURCE OPTIONS / ISSUE	1. Marshall Davis Farms	2. Project Area Groundwater	3. Algal Turf Scrubber	4. Stanislaus County Groundwater	5. Berenda Mesa Water District	6. Mercey Springs Water District	7. Oakwood Lake Resort	8. Bravo Management Company
Aesthetic			✔					
Agricultural Land	✔	✔	✔	✔	✔	✔		✔
Air Quality			✔					
Archaeological		✔	✔	✔	✔	✔	✔	✔
Flooding/Drainage		✔	✔	✔	✔	✔	✔	✔
Geologic/Seismic		✔	✔	✔	✔	✔	✔	✔
Noise								
Public Services			✔		✔	✔		✔
Soil Erosion								
Toxic/Hazardous			✔					
Traffic/Circulation			✔					
Vegetation		✔	✔	✔	✔	✔	✔	✔
Water Quality	✔	✔	✔	✔	✔	✔	✔	✔
Water Supply	✔	✔	✔	✔	✔	✔	✔	✔
Wetland/Riparian		✔	✔	✔	✔	✔	✔	✔
Wildlife		✔	✔	✔	✔	✔	✔	✔
Growth Inducing			✔	✔	✔	✔		✔
Incompatible Land Use			✔	✔	✔	✔		✔
Other								

N.O.P.
RECIPIENTS
STANISLAUS COUNTY

STANISLAUS COUNTY
BOARD OF SUPERVISORS
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
CHIEF EXECUTIVE OFFICE
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STANISLAUS COUNTY
AGRICULTURE
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MODESTO CA 95355

STANISLAUS COUNTY
DEPT OF ENVIRONMENTAL
RESOURCES
1716 MORGAN RD
MODESTO CA 95358

STANISLAUS COUNTY
CONSOLIDATED FIRE DISTRICT
929 OAKDALE RD
MODESTO CA 95355

STANISLAUS COUNTY
SHERIFF'S OFFICE
200 E HACKETT RD
MODESTO CA 95358

STANISLAUS COUNTY
COUNSEL
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
DEPT OF PUBLIC WORKS
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
DEPT OF BUILDING
INSPECTIONS
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
DEVELOPMENT SERVICES
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
ANIMAL CONTROL
2846 FINCH RD
MODESTO CA 95354

STANISLAUS COUNTY ERC
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
PARKS DEPARTMENT
1716 MORGAN RD
MODESTO CA 95358

STANISLAUS COUNTY
REDEVELOPMENT AGENCY
1100 H STREET
MODESTO CA 95354

STANISLAUS COUNTY
SUPERIOR COURT
DAVID VANDER WALL
1100 I STREET
MODESTO CA 95354

STATE OF CALIFORNIA

STATE CLEARINGHOUSE
1400 10TH STREET
SACRAMENTO CA 95814

CENTRAL CA INFORMATION
CENTER
DEPT OF ANTHROPOLOGY
CAL-STE STANISLAUS
801 W MONTE VISTA AVENUE
TURLOCK CA 95380

STATE OF CALIFORNIA
DEPT OF WATER RESOURCES
1416 NINTH STREET
SACRAMENTO CA 94236-0001

DEPARTMENT OF FISH AND
GAME
ENVIRONMENTAL SERVICES
1234 E SHAW AVENUE
FRESNO CA 93710

DEPT OF CONSERVATION
GOVERNMENTAL &
ENVIRONMENTAL
RELATIONS
801 K STREET
SACRAMENTO CA 95814-3528

CALTRANS
PO BOX 2048
STOCKTON CA 95201

CALIF DEPT OF FORESTRY
DEL PUERTO RANGER DISTRICT
2142 SPERRY ROAD
PATTERSON CA 95363

CALIF DEPT OF FORESTRY
SANTA CLARA RANGER UNIT
15670 S MONTEREY STREET
MORGAN HILL CA 95037

SAN JOAQUIN VALLEY
AIR POLLUTION CONTROL
DISTRICT
4230 KIERNAN AVE
MODESTO CA 95356

CALIF STATE WATER
RESOURCES CONTROL BOARD
901 "P" STREET
SACRAMENTO CA 95801

REGIONAL WATER QUALITY
CONTROL
3443 ROUTIER RD
SACRAMENTO CA 95827

DEPT OF HEALTH SERVICES
714/744 "P" STREET
SACRAMENTO CA 95814

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CARL HONAKER
MOFFETT FEDERAL AIRFIELD
MAIL STOP 19-1
MOFFETT FIELD CA 94035-
1000

US FISH AND WILDLIFE
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SACRAMENTO CA 95825

CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814 2922

US BUREAU OF RECLAMATION
2800 COTTAGE WAY
SACRAMENTO CA 95825

N.O.P. Recipients (continued)

MISC. DISTRICTS

TURLOCK MOSQUITO
ABATEMENT DISTRICT
4412 N WASHINGTON RD
TURLOCK CA 95380

PATTERSON HOSPITAL
DISTRICT
PO BOX 187
PATTERSON CA 95363

NEWMAN/CROWS LANDING
SCHOOL DISTRICT
890 O STREET
NEWMAN CA 95360

WEST STANISLAUS
FIRE PROTECTION DISTRICT
PO BOX 565
PATTERSON CA 96363

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CHAUVET HOUSE
P O BOX 1659
GLEN ELLEN CA 95442

SIERRA CLUB CALIFORNIA
1014 NINTH STREET STE 201
SACRAMENTO CA 95814

STEVE BURKE
c/o ECOLOGY ACTION EDUCATIONAL
INSTUTUTE
STANISLAUS NATURAL HERITAGE
VALLEY AIR TRUST
2509 DESCANSO WAY
MODESTO CA 95356

ORIGINAL DRAFT EIR RESPONDERS

STANISLAUS COUNTY
FARM BUREAU
PO BOX 3070
MODESTO CA 95353

RUDOLPH & FREDA HANSON
PO BOX 7
PATTERSON CA 95363

JOHN COX
PO BOX 247
WESTLEY CA 95387

HENRY A GNESA
PO BOX 1356
PATTERSON CA 95363

YOKUTS GROUP MOTHERLODE
CHAPTER
SIERRA CLUB
PO BOX 855
MODESTO CA 95353

ELAINE GORMAN
234 N CONEJO AVE
MODESTO CA 95354

CALIFORNIA NATIVE PLANT
SOCIETY
909 12TH STREET STE 116
SACRAMENTO CA 95814

DEFENDERS OF WILDLIFE
1228 N ST STE 6
SACRAMENTO CA 95814

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SAN FRANCISCO CA 94111-
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SUNFLOWER RANCH CO
PO BOX 666
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PEREZ FARMS
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CROWS LANDING CA 95313

ROBERT MCDONALD
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ANTONIO ESCOBAR JR
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PATTERSON CA 95363

GOAL
C/O MAUREEN FORNEY
867 HILLSWOOD CRT
OAKDALE CA 95361

PATTY HOBBS
ENVIRONMENTAL CONSULTING
859 W MULBERRY AVE #4
PORTERVILLE CA 93257

NORMOYLE & NEWMAN
801 10TH STREET
FIFTH FLOOR SUITE 1
MODESTO CA 95354
PLUMBERS & STEAMFITTERS
UA LOCAL 437

c/o DANIEL L CARDOZO
ADAMS & BROADWELL
1875 SO. GRANT ST STE 600
SAN MATEO CA 94402

THOMAS REID ASSOCIATES
505 HAMILTON AVE STE 201
BOX 872
PALO ALTO CA 94301

SAAG
1315 I STREET
MODESTO CA 95354-0913

LORETTA K YOUNGMAN
8622 LASAINE AVE
NORTHRIDGE CA 91325

N.O.P. Recipients (continued)

MUNICIPAL

CITY OF PATTERSON
344 W LAS PALMAS
PATTERSON CA 95363

CITY OF NEWMAN
PO BOX 787
NEWMAN CA 95360

CITY OF CERES
PO BOX 217
CERES CA 95307

CITY OF MODESTO
PO BOX 642
MODESTO CA 95353

KERN COUNTY PLANNING
2700 M STREET SUITE 100
BAKERSFIELD CA 93301

SAN JOAQUIN COUNTY
PLANNING
1810 E HAZELTON AVENUE
STOCKTON CA 95205

SANTA CLARA COUNTY
PLANNING
70 W HEDDING STREET
7TH FLOOR EAST WING
SAN JOSE CA 95110

FRESNO COUNTY PLANNING
2200 TULARE STREET
6TH FLOOR
FRESNO CA 93721

MERCED COUNTY PLANNING
2222 M STREET
MERCED CA 95340

BAKERSFIELD PLANNING DEPT
1501 TRUXTUN AVENUE
BAKERSFIELD CA 93301

WATER DISTRICTS

WESTERN HILLS WATER DIST
801 10TH STREET
FIFTH FLOOR SUITE 1
MODESTO CA 95354

TURLOCK IRRIGATION DIST
PO BOX 949
TURLOCK CA 95381

BERENDA MESA WATER DIST
2100 "F" STREET SUITE 100
BAKERSFIELD CA 93301

MERCY SPRINGS WATER DIST
51170 W ALTHEA
FIREBAUGH CA 93622

NEW DEL PUERTO WATER DIST
PO BOX 98
WESTLEY CA 95387

PATTERSON WATER DIST
PO BOX 685
PATTERSON CA 95363

KERN COUNTY WATER
AGENCY
P O BOX 58
BAKERSFIELD CA 93302-0058

PACIFIC GAS & ELECTRIC
REGIONAL LAND DEPT
650 "O" STREET
3RD FLOOR
FRESNO CA 93760-0001

BRAVO MANAGEMENT CO. INC
2601 OSWELL STREET SUITE
201
P O BOX 60679
BAKERSFIELD CA 93386-0679

OAKWOOD LAKE WATER PARK
874 E WOODWARD
MANTECA CA 95337

CENTRAL CALIFORNIA.
IRRIGATION DISTRICT.
P.O. BOX 1231
LOS BANOS, CA 93635

MODESTO IRRIGATION
DISTRICT
1231 11TH STREET
MODESTO, CA 95354

Property Owners Adjacent to Diablo Grande Project Site

Names and Addresses on File with Stanislaus County Planning Department

Property Owners Adjacent to Known Off-Site Well Locations

Names and Addresses on File with Stanislaus County Planning Department

NEWSPAPERS

THE MODESTO BEE
1325 H STREET
MODESTO CA 95354

PATTERSON IRRIGATOR
26 N 3RD STREET
PATTERSON CA 95363-2507

WEST SIDE INDEX
P O BOX 878
NEWMAN CA 95360

Stanislaus County Farm Bureau

1201 L Street • P.O. Box 3070 • Modesto, California 95353 • 209/522-7278

April 28, 1997

STANISLAUS COUNTY DEPARTMENT
OF PLANNING & COMMUNITY DEVELOPMENT
KIRK FORD, ENVIRONMENTAL COORDINATOR
1100 H STREET
MODESTO, CA 95354

RE: Diablo Grande Water Plan NOP Addendum

Dear Kirk:

Our April 7, 1997 comments concerning the Notice of Preparation for the Supplemental Environmental Impact Report for Diablo Grande's permanent water supply indicated that water deliveries through the Delta Mendota Canal to Central Valley Project (CVP) contractors may be reduced.

Enclosed for the record is the official Bureau of Reclamation announcement that agricultural water supplies south of the Delta have been reduced to 90 percent of full deliveries. This is very relevant to the water supply picture for Diablo Grande and, as you would expect, deeply concerns Farm Bureau since reliable water supplies for the westside of the San Joaquin Valley are not available on the heels of three consecutive wet years with recent significant flooding.

We appreciate your inclusion of this information. If you have questions, please don't hesitate to call.

Sincerely,

RON MACEDO
PRESIDENT

AL BRIZARD
WATER COMMITTEE CHAIRMAN

Enclosure

cc: David J. Guy, CFBF Counsel
Russ Newman, Esquire, Normoyle and Newman

News Release

Mid-Pacific Regional Office 2800 Cottage Way Sacramento CA 95825-1898
(916) 97-WATER
Fax (916) 979 - 2229

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MP-97-16
Jeffrey S. McCracken

FOR IMMEDIATE RELEASE: April 17, 1997

BONE DRY CONDITIONS CAUSE REDUCTION IN CENTRAL VALLEY PROJECT SUPPLIES

Bone dry conditions for the past 3 months are causing hydrologists at the Bureau of Reclamation to revise the 1997 water allocation to Federal water contractors and to reassess recreational water supplies for the coming summer.

Reclamation's initial forecast of 100 percent supply was based on January hydrology and anticipated flood runoff in the San Joaquin River and normal precipitation in February, March and April. February and March turned out to be one of the driest in 100 years at Blue Canyon, a key measuring station for the American River Basin. There has been less than 1/4 inch of precipitation in April, continuing the dry spell.

The abnormal weather patterns of 1997 will impact Central Valley Project water supplies and cause an abbreviated recreational season at Folsom Reservoir. Revised Central Valley Project water supplies for water year 1997 will be as follows:

Contractors	Supply	
	Percent	Acre-Feet
Agricultural	90	2,225,000
Urban	90-100	400,000
Wildlife Refuges	As scheduled	326,000
Sacramento River water rights holders San Joaquin River exchange contractors	100 100	2,200,000 880,000
Stanislaus River	100 of request	50,600
Friant Class I Class II	100 52	800,000 730,000
Total		7,611,000

(MORE)

Due to the late timing of this unprecedented revision in water allocations, Reclamation will work closely with federal water contractors to fulfill water deliveries through the peak of the growing season. At the same time, Reclamation will be working with the Department of Water Resources to provide fish protections recommended by the Fish and Wildlife Service and the National Marine Fisheries Service under the Bay-Delta Accord and the Central Valley Project Improvement Act.

In our 1996 allocation announcement, Interior clarified that b (2) water can be used in the Delta above the Bay-Delta Accord requirement. While not provided for in this forecast, this 1997 water year may necessitate such use. This revised 1997 allocation enables Interior to meet many of the 1997 Delta objectives recommended by the Fish and Wildlife Service. The Delta and upstream recommended objectives will be further refined in the coming weeks. This may result in additional b (2) water being used in the Delta. The intent is to implement measures consistent with the Delta smelt biological opinion through the No Net Loss provisions of the Bay-Delta Accord.

Based on current projections most Central Valley Project reservoirs will not refill this summer as space was reserved for flood protection. Storage in Folsom reservoir is expected to peak the end of May at 620,000 acre-feet, that's about 63 percent of the reservoir's capacity. Re-operation of Folsom to provide additional flood control for the city of Sacramento will require the Sacramento Area Flood Control Agency to purchase water and compensate for lost power production to make up for the additional flood space provided during the massive January storms.

Forecast of CVP operations are available on the Mid-Pacific Region's homepage of the Internet at http://www.mp.usbr.gov/u/www/cvo/html/index.html Allocation information is also available by calling the Grapevine at 1-1800-742-9474 and entering 201. The Bureau of Reclamation's TDD number is (916) 979-2310.

###

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:

PPN 2347

May 2, 1997

Stanislaus County Planning Department
Kirk Ford, Environmental Coordinator
1100 H Street
Modesto, California 95354

Subject: Notice of Preparation of a Supplemental Environmental Impact Report; Diablo Grande, Patterson, Stanislaus County, California

Dear Mr. Ford:

The U.S. Fish and Wildlife Service (Service) has reviewed the Notice of Preparation of a Supplemental Environmental Impact Report for the Diablo Grande Water Plan. These comments are intended to assist you in your review of the proposal, and will not take the place of any formal comments that may be required under the provisions of the Fish and Wildlife Coordination Act.

Enclosure A provides a list of sensitive species that may occur in the county of the project area and general survey guidelines. Enclosure B recommends general guidelines for identifying and mitigating project impacts to fish, wildlife, and their habitats. We encourage you to use these guidelines to develop a comprehensive environmental document that addresses these needs.

If you have any questions regarding these comments, please contact Janice Gan (Wetlands Branch) at (916) 979-2113.

Sincerely,

for Wayne S. White
Field Supervisor

Enclosures

cc: AES-Portland, OR
FWS-ES, Section 7
Reg. Mgr., CDFG, Reg. IV, Fresno
(w/o enclosures)

ENCLOSURE A

Endangered Species. This attachment identifies those listed, proposed, candidate, and/or species of concern that may occur in the proposed project area. Information and maps concerning candidate species in California may be obtained from the California Natural Diversity Data Base, a program administered by the California Department of Fish and Game. Requests for information should be addressed to the Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814. The marketing manager may be contacted by calling (916) 324-0562. You may request additional information from the Chief, California Department of Fish and Game, Non-Game Heritage Program, at (916) 324-8348.

Listed species are fully protected under the mandates of the Endangered Species Act (Act), as amended. Section 9 of the Act and its implementing regulations prohibit the "take" of a federally listed fish and wildlife species by any person, as defined by the Act. Take is defined by the Act "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such species. Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR § 17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of this project, initiation of formal consultation is required between that agency and the Service pursuant to section 7 of the Act if it is determined that the proposed project may affect a federally listed species. Federal agencies must confer if they determine that the continued existence of a proposed species may be jeopardized by the project. Such consultation or conference could result in a biological opinion that addresses anticipated effects of the project to listed and proposed species. The biological opinion may authorize a limited level of incidental take for federally listed species.

If a Federal agency is not involved with the project, and federally listed species may be taken as part of the project, then an "incidental take" permit pursuant to section 10(a) of the Act should be obtained. The Service may issue such a permit upon completion by the permit applicant of a satisfactory conservation plan for the listed species that may be affected by the project.

We recommend that appropriately designed surveys for listed, proposed, candidate, and species of concern be undertaken by qualified biologists. Surveys for plants should not be restricted to the identified species; instead, a complete botanical inventory of the project site should be conducted. Botanical surveys should be conducted at intervals throughout the spring and summer, in order to maximize the likelihood of encountering each species during the season most appropriate for accurate identification. Surveys should be based on field inspection, and not on prediction of occurrence based on habitat or physical features of the site. Guidelines for conducting adequate botanical surveys are available from the Natural Heritage Division of the California Department of Fish and Game at (916) 322-2493.

The results of all biological surveys should be published in the environmental impact report. The report should include a brief discussion of survey methods (including sampling methods and timing of surveys), results (including a list of all species encountered as well as maps of vegetation types, populations of plant species, and breeding, nesting or burrowing sites or other habitat components important to animal species), and conclusions. If it is concluded that a given sensitive species is not present, the justification for this conclusion should be fully explained.

Should these surveys determine that federally listed, proposed, or candidate species occur in the area and are likely to be affected by the proposed

project, the Service recommends that the project proponent, in consultation with this office and the California Department of Fish and Game, develop a plan that mitigates for the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. The mitigation plan also should be included in the environmental document.

Candidate species are currently being reviewed by the Service and are under consideration for possible listing as endangered or threatened. Candidate species have no protection under the Endangered Species Act, but are included for your consideration as it is possible that one or more of these candidates could be proposed and listed before the subject project is completed. One of the benefits of considering candidate species as well as listed and proposed species early in the process is that by exploring alternatives, it may be possible to avoid conflicts that could develop, should a candidate species become listed before the project is complete. In addition, in instances where the Service addresses proposed projects under its Fish and Wildlife Coordination Act authority, we must also analyze the impacts on candidate species and make recommendations to mitigate any adverse effects.

In the Federal Register of February 28, 1996, the Service changed its policy on candidate species. The term *candidate* now strictly refers to species for which the Service has on file enough information to propose listing as endangered or threatened. Former *category 2* candidate species - species for which listing is possibly appropriate but for which the Service lacks sufficient information to support a listing proposal - are now called *species of concern*. They are no longer monitored by the Service. However we have retained them on the enclosed list for general information. We encourage consideration of them in project planning, as they may become candidate species in the future.

Endangered and Threatened Species that May Occur in or be Affected by Projects in the Area of the Following California County or Counties

April 28, 1997

STANISLAUS COUNTY

Listed Species

Mammals
- San Joaquin kit fox, *Vulpes macrotis mutica* (E)

Birds
- American peregrine falcon, *Falco peregrinus anatum* (E)
- Aleutian Canada goose, *Branta canadensis leucopareia* (T)
- bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles
- giant garter snake, *Thamnophis gigas* (T)

Amphibians
- California red-legged frog, *Rana aurora draytonii* (T)

Fish
- delta smelt, *Hypomesus transpacificus* (T)

Invertebrates
- Conservancy fairy shrimp, *Branchinecta conservatio* (E)
- longhorn fairy shrimp, *Branchinecta longiantenna* (E)
- vernal pool tadpole shrimp, *Lepidurus packardi* (E)
- vernal pool fairy shrimp, *Branchinecta lynchi* (T)
- valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

Plants
- hairy Orcutt grass, *Orcuttia pilosa* (E)
- fleshy owl's-clover, *Castilleja campestris ssp. succulenta* (T)
- Hoover's spurge, *Chamaesyce hooveri* (T)
- Colusa grass, *Neostapfia colusana* (T)
- Greene's tuctoria, *Tuctoria greenei* (E)
- San Joaquin Valley Orcutt grass, *Orcuttia inaequalis* (T)

Proposed Species

Fish
- Central Valley steelhead, *Oncorhynchus mykiss* (PE)
- Sacramento splittail, *Pogonichthys macrolepidotus* (PT)

STANISLAUS COUNTY

Proposed Species

Plants
Hartweg's golden sunburst, *Pseudobahia bahlifolia* (PE)

Candidate Species

Mammals
San Joaquin Valley woodrat, *Neotoma fuscipes riparia* (C)
riparian brush rabbit, *Sylvilagus bachmani riparius* (C)

Birds
mountain plover, *Charadrius montanus* (C)

Amphibians
California tiger salamander, *Ambystoma californiense* (C)

Species of Concern

Mammals
Merced kangaroo rat, *Dipodomys heermanni dixoni* (SC)
greater western mastiff-bat, *Eumops perotis californicus* (SC)
small-footed myotis bat, *Myotis ciliolabrum* (SC)
long-eared myotis bat, *Myotis evotis* (SC)
fringed myotis bat, *Myotis thysanodes* (SC)
long-legged myotis bat, *Myotis volans* (SC)
Yuma myotis bat, *Myotis yumanensis* (SC)
San Joaquin pocket mouse, *Perognathus inornatus* (SC)
Pacific western big-eared bat, *Plecotus townsendii townsendii* (SC)

Birds
tricolored blackbird, *Agelaius tricolor* (SC)
Bell's sage sparrow, *Amphispiza belli belli* (SC)
western burrowing owl, *Athene cunicularia hypugea* (SC)
ferruginous hawk, *Buteo regalis* (SC)
little willow flycatcher, *Empidonax traillii brewsteri* (SC)
white-faced ibis, *Plegadis chihi* (SC)

Reptiles
silvery legless lizard, *Anniella pulchra pulchra* (SC)
northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
southwestern pond turtle, *Clemmys marmorata pallida* (SC)

STANISLAUS COUNTY

Species of Concern

Reptiles
- San Joaquin whipsnake, *Masticophis flagellum ruddocki* (SC)
- California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians
- foothill yellow-legged frog, *Rana boylii* (SC)
- western spadefoot toad, *Scaphiopus hammondii* (SC)

Fish
- green sturgeon, *Acipenser medirostris* (SC)
- river lamprey, *Lampetra ayresi* (SC)
- Kern Brook lamprey, *Lampetra hubbsi* (SC)
- Pacific lamprey, *Lampetra tridentata* (SC)
- longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates
- Sacramento anthicid beetle, *Anthicus sacramento* (SC)
- moestan blister beetle, *Lytta moesta* (SC)
- molestan blister beetle, *Lytta molesta* (SC)

Plants
- vernal pool saltbush, *Atriplex persistens* (SC)
- Hoover's rosinweed, *Calycadenia hooveri* (SC)
- Mt. Hamilton harebell, *Campanula sharsmithiae* (SC)
- Mt. Hamilton thistle, *Cirsium fontinale var. campylon* (SC)
- beaked clarkia, *Clarkia rostrata* (SC)
- Mt. Hamilton coreopsis, *Coreopsis hamiltonii* (SC)
- spiny-sepaled coyote-thistle, *Eryngium spinosepalum* (SC)
- talus fritillary, *Fritillaria falcata* (SC)
- red-flowered lotus, *Lotus rubriflorus* (SC)
- little mousetail, *Myosurus minimus ssp. apus* (SC)
- Mt. Diablo phacelia, *Phacelia phacelioides* (SC)
- alkali milk-vetch, *Astragalus tener var. tener* (SC)
- heartscale, *Atriplex cordulata* (SC)
- brittlescale, *Atriplex depressa* (SC)
- delta coyote-thistle, *Eryngium racemosum* (SC)
- diamond-petaled poppy, *Eschscholzia rhombipetala* (SC)
- legenere, *Legenere limosa* (SC)
- Merced monardella, *Monardella leucocephala* (SC)

STANISLAUS COUNTY

Species of Concern

KEY.

(E)	*Endangered*	Listed (in the Federal Register) as being in danger of extinction.
(T)	*Threatened*	Listed as likely to become endangered within the foreseeable future.
(P)	*Proposed*	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(C)	*Candidate*	Candidate to become a *proposed* species.
(SC)	*Species of Concern*	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(*)	Possibly extinct.	
	Critical Habitat	Area essential to the conservation of a species.

ENCLOSURE B

The goal of the U.S. Fish and Wildlife Service is to conserve, protect and enhance fish, wildlife, and their habitats by timely and effective provision of fish and wildlife information and recommendations. To assist us in accomplishing this goal, we would like to see the items described below discussed in your environmental documents for the proposed project.

Project Description. The document should very clearly state the purposes of, and document the needs for, the proposed project so that the capabilities of the various alternatives to meet the purposes and needs can be readily determined.

A thorough description of all permanent and temporary facilities to be constructed and work to be done as a part of the project should be included. The document should identify any new access roads, equipment staging areas, and gravel processing facilities which are needed. Figures accurately depicting proposed project features in relation to natural features (such as streams, wetlands, riparian areas, and other habitat types) in the project area should be included.

Affected Environment. The document should show the location of, and describe, all vegetative cover types in the areas potentially affected by all project alternatives and associated activities. Tables with acreages of each cover type with and without the project for each alternative would also be appropriate. We recommend that all wetlands in the project area be delineated and described according to the classification system found in the Service's Classification of Wetlands and Deepwater Habitats of the United States (Cowardin 1979). The Service's National Wetland Inventory maps would be one starting point for this effort.

The document should present and analyze a full range of alternatives to the proposed project. At least one alternative should be designed to avoid all impacts to wetlands, including riparian areas. Similarly, within each alternative, measures to minimize or avoid impacts to wetlands should be included.

Lists of fish and wildlife species expected to occur in the project area should be in the document. The lists should also indicate for each species whether or not it is a resident or migrant, and the period(s) of the year it would be expected in the project area.

Environmental Consequences. The sections on impacts to fish and wildlife should discuss impacts from vegetation removal (both permanent and temporary), filling or degradation of wetlands, interruption of wildlife migration corridors, and disturbance from trucks and other machinery during construction and/or operation. These sections should also analyze possible impacts to streams from construction of outfall structures, pipeline crossings, and filling. Impacts on water quality, including nutrient loading, sedimentation, toxics, biological oxygen demand, and temperature in receiving waters should also be discussed in detail along with the resultant effects on fish and aquatic invertebrates. Discussion of indirect impacts to fish, wildlife, and their habitats, including impacts from growth induced by the proposed project, should also be addressed in the document. The impacts of each alternative should be discussed in sufficient detail to allow comparison between the alternatives.

The cumulative impacts of the project, when viewed in conjunction with other past, existing, and foreseeable projects, need to be addressed. Cumulative impacts to fish, wildlife, wetlands and other habitats, and water quality should be included.

Mitigation Planning. Under provisions of the Fish and Wildlife Coordination Act, the Service advises the U.S. Army Corps of Engineers on projects involving dredge and fill activities in "waters of the United States", of which wetlands and some riparian habitats are subcategories. Since portions of this proposal may ultimately require a Corps permit, the Service will subsequently be involved under the Coordination Act. Therefore, if you have not done so already, we suggest that you or your representative consult the Corps regarding onsite wetlands and related habitats that may fall under their jurisdiction, and include this information in the draft document. When reviewing Corps public notices, the Service generally does not object to projects meeting the following criteria:

1. They are ecologically sound;

2. The least environmentally damaging reasonable alternative is selected;

3. Every reasonable effort is made to avoid or minimize damage or loss of fish and wildlife resources and uses;

4. All important recommended means and measures have been adopted, with guaranteed implementation to satisfactorily compensate for unavoidable damage or loss consistent with the appropriate mitigation goal; and

5. For wetlands and shallow water habitats, the proposed activity is clearly water dependent and there is a demonstrated public need.

The Service may recommend the "no project" alternative for those projects which do not meet all of the above criteria, and where there is likely to be a significant fish and wildlife resource loss.

When projects impacting waterways or wetlands are deemed acceptable to the Service, we recommend full mitigation for any impacts to fish and wildlife. The Council on Environmental Quality regulations for implementing the National Environmental Policy Act define mitigation to include: 1) Avoiding the impact; 2) minimizing the impact; 3) rectifying the impact; 4) reducing or eliminating the impact over time; and 5) compensating for impacts. The Service supports and adopts this definition of mitigation and considers the specific elements to represent the desirable sequence of steps in the mitigation planning process. Accordingly, we maintain that the best way to mitigate for adverse biological impacts is to avoid them altogether.

The document should describe all measures proposed to avoid, minimize, or compensate for impacts to fish and wildlife and their habitats. The measures should be presented in as much detail as possible to allow us to evaluate their probable effectiveness.

Because of their very high value to migratory birds, and their ever-increasing scarcity in California, our mitigation goal for wetlands (including riparian and riverine wetlands) is no net loss of in-kind habitat value or acreage (whichever is greater).

For unavoidable impacts, to determine the mitigation credits available for a given mitigation project, we evaluate what conditions would exist on the mitigation site in the future in the absence of the mitigation actions, and compare those conditions to the conditions we would expect to develop on the site with implementation of the mitigation plan.

Mitigation habitat should be equal to or exceed the quality of the habitat to be affected by the project. Baseline information would need to be gathered at the impact site to be able to quantify this goal in terms of plant species

diversity, shrub and tree canopy cover, stems/acre, tree height, etc. The ultimate success of the project should be judged according to these same measurements at the mitigation site.

Criteria should be developed for assessing the progress of the project during its developmental stages as well. Assessment criteria should include rates of plant growth, plant health, and evidence of natural reproduction. Success criteria should be geared toward equaling or exceeding the quality of the highest quality habitat to be affected. In other words, the mitigation effort would be deemed a success in relation to this goal if the mitigation site met or exceeded habitat measurements at a "model" site (plant cover, density, species diversity, etc.).

The plan should present the proposed ground elevations at the mitigation site, along with elevations in the adjacent areas. A comparison of the soils of the proposed mitigation and adjacent areas should also be included in the plan, and a determination made as to the suitability of the soils to support habitats consistent with the mitigation goals.

Because wetland ecosystems are driven by suitable hydrological conditions, additional information must be developed on the predicted hydrology of the mitigation site. The plan should describe the depth of the water table, and the frequency, duration, areal extent, and depth of flooding which would occur on the site. The hydrologic information should include an analysis of extreme conditions (drought, flooding) as well as typical conditions.

The plan must include a timeframe for implementing the mitigation in relation to the proposed project. We recommend that mitigation be initiated prior to the onset of construction. If there will be a substantial time lag between project construction and completion of the mitigation, a net loss of habitat values would result, and more mitigation would be required to offset this loss.

Generally, monitoring of the mitigation site should occur annually for at least the first five years, biennially for years 6 through 11, and every five years thereafter until the mitigation has met all success criteria. Remediation efforts and additional monitoring should occur if success criteria are not met during the first five years. Some projects will require monitoring throughout the life of the project. Reports should be prepared after each monitoring session.

The plan should require the preparation of "as-built" plans. Such plans provide valuable information, especially if the mitigation effort fails. Similarly, a "time-zero" report should be mandated. This report would describe exactly what was done during the construction of the mitigation project, what problems were encountered, and what corrections or modifications to the plans were undertaken.

The plan should detail how the site is to be maintained during the mitigation establishment period, and how long the establishment period will be. It will also be important to note what entity will perform the maintenance activities, and what entity will ultimately own and manage the site. In addition, a mechanism to fund the maintenance and management of the site should be established and identified. A permanent easement should be placed on the property used for the mitigation that would preclude incompatible activities on the site in perpetuity.

Finally, in some cases, a performance bond may be required as part of the mitigation plan. The amount of the bond should be sufficient to cover the costs of designing and implementing an adequate mitigation plan (and purchasing land if needed) should the proposed plan not succeed.

Reference

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Washington, D.C. 103 pp.

SOUTH DELTA WATER AGENCY

2509 WEST MARCH LANE, SUITE 200
POST OFFICE BOX 70383
STOCKTON, CALIFORNIA 95267
TELEPHONE (209) 474-2509
FAX (209) 474-9701

April 15, 1997

Mr. Kirk Ford
Environmental Coordinator
Stanislaus County Department of Planning
and Community Development
1100 H Street
Modesto, CA 95354

Re: Diablo Grande Project
Notice of Preparation of Draft
Supplemental Environmental Impact Report

Dear Mr. Ford:

Our Agency has recently become aware of the Notice of Preparation of the Draft Supplemental Environmental Impact Report for the above-named project. Please add our Agency to the mailing list for this project, in order that we may be given an opportunity to review and comment on the DSEIR once it is produced.

The SDWA is statutorily charged with protecting the quality and quantity of water in the South Delta. At certain times, the amount of water flowing down the San Joaquin River is insufficient to supply the riparian needs within our Agency's boundaries. In addition, the Vernalis water quality standard (measured in EC) is regularly not met. As a result, any change or increase in water use, groundwater pumping, or export pumping must be examined in light of the South Delta's current situation. Recently, we have seen numerous environmental documents that fail to consider how a change in use during one time of the year can effect water availability at other times of the year.

We believe our Agency can give valuable information regarding the effects of the various options you are considering.

Very truly yours,

By _____
JOHN HERRICK

JH/dd
cc: EMC Planning Group, Inc.
Mr. David J. Guy
Mr. Alex Hildebrand

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
P. O. BOX 1810 – 1810 E. HAZELTON AVENUE
STOCKTON CALIFORNIA 95201
(209) 468-3000
FAX (209) 468-2999

HENRY M. HIRATA
DIRECTOR

THOMAS R. FLINN
DEPUTY DIRECTOR
MANUEL LOPEZ
DEPUTY DIRECTOR
STEVEN WINKLER
DEPUTY DIRECTOR

March 26, 1997

Mr. Kirk Ford
Environmental Coordinator
Stanislaus County
Department of Planning
1100 "H" Street
Modesto, California 95354

SUBJECT: DIABLO GRANDE WATER PLAN

Dear Mr. Ford:

The following issues of concern to San Joaquin County must be addressed in the subject Diablo Grande Water Plan Supplemental EIR Report:

- The Report must state the impact on the Eastern San Joaquin County aquifer for the long-term water supply for the Diablo Grande Project.
- Is the proposed groundwater pumping in accordance with the San Joaquin County Groundwater Export Ordinance?

In the event there are any questions, please telephone me at (209) 468-3089, or Mahmoud Saqqa at (209) 463-8924.

Sincerely,

John W. Pulver

JOHN W. PULVER
Water Resources Coordinator

JWP:MS:to
C:\RLDCNTRL\DIABLO KF

c: Mahmoud Saqqa, Associate Civil Engineer

Kirk

Brandt-Hawley & Zoia

An Association of Attorneys

Chauvet House
Post Office Box 1659
Glen Ellen, California 95442
(707) 938-3908 • 576-0198
Fax (707) 576-0175
econet: bhz@igc.apc.org

Susan Brandt-Hawley
Rose M. Zoia

Legal Assistant
Sara Hews

April 1, 1997

Bob Kachel
Environmental Coordinator
Stanislaus County
Department of Planning
and Community Development
1100 H Street
Modesto CA 95354

RE: Diablo Grande

Dear Mr. Kachel:

Thank you for sending this office copies of notices related to the Diablo Grande project.

Please continue to provide us with these notices or let me know if we should be directing this request to another individual. Thank you.

Very truly yours,

Rose M. Zoia

cc: Client
Rick Jarvis

e:\diablo\planning.ltr

STATE OF CALIFORNIA—THE RESOURCES AGENCY

PETE WILSON, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-7791

Mr. Kirk Ford
Senior Planner
Stanislaus County
100 H Street
Modesto, California 95354

Re: Comments on Notice of Preparation for Diablo Grande Specific plan: Water Resources Plan draft EIR, SCH # 97032022

Dear Mr. Ford:

This is in response to the Notice of Preparation of a Supplemental Environmental Impact Report for the Diablo Grande planned resort community. I apologize for the delay in providing comments.

Enclosed you will find comments prepared by the State Water Project Analysis Office of the California Department of Water Resources. If you have questions about the comments, please call me at (916) 653-4547.

Sincerely,

Scott A. Jercich

Scott A. Jercich, P.E.
Program Manager
State Water Project Analysis Office

Enclosure

Department of Water Resources
State Water Project Analysis Office
April 22, 1997

Comments for Diablo Grande Specific Plan:
Water Resources Plan draft EIR, SCH # 97032022

Option 1 - Marshall Davis Farms

This alternative proposes the extraction of 1,200 acre-foot of groundwater each year from the Marshall-Davis Farms property. Since the California Aqueduct is near the area of proposed groundwater extraction, possible subsidence in the area of the Aqueduct resulting from the extraction is a concern.

Option 2 - Project Area Groundwater

This option also involves pumping groundwater from wells located in the general area of the California Aqueduct. Again, possible subsidence in the area of the Aqueduct is a concern.

Option 3 - Algal Turf Scrubber

This option includes the discharge of treated effluent into the San Joaquin River and then, according to the Notice Of Preparation, diverting an equal amount from the river for use at Diable Grande.

The amount of water diverted for Diable Grande under this option should be the amount discharged into the river less any losses that occur between the point of discharge and the point of diversion. If losses are not considered, less water may enter the Sacramento - San Joaquin Delta with the transfer than without the transfer. This could require the release of additional water from State Water Project or Central Valley Project reservoirs to meet water quality requirements in the Delta. The Bureau of Reclamation generally provides information to the Department concerning losses related to such transfers on the San Joaquin River.

Option 4 - Shallow County Groundwater

This option involves the extraction and transfer of groundwater from possible locations east or west of the San Joaquin River. Extracted groundwater is then transported for use by Diablo Grande.

As with options 1 and 2, possible subsidence affecting the California Aqueduct is a concern. An additional concern involves a possible reduction in accretions to the San Joaquin River due to groundwater pumping. This has the potential of reducing flow to the Delta which could impact the SWP and federal CVP water supplies.

Option 5 - Bernenda Mesa Water Storage District

Option 5, page 3-8 states with regard to its SWP Contractors that "DWR currently can supply an average of only about 50 percent of the current demand." This statement is a bit misleading in that the SWP has been able to provide 100 percent of the entitlement requests by its SWP Contractors 30 out of 35 years. The SWP delivered less than full requests during the water-short years of 1976, 1977, 1991, 1992 and 1994. A statement should be added to clarify this point.

Option 6 - Mercy Springs Water District

No Comments.

Option 7 - Oakwood Lake Water District

Paragraph 2, page 3-10 states that the State Water Resources Control Board agreed that 95 percent of the water discharged to the San Joaquin River is groundwater. Our records indicate that this determination was made over six years ago. As a result, the pump-in operation at the Manteca Water Slides and available groundwater data should be revisited to ensure the original conclusion is still valid.

This option proposes to use SWP facilities to transfer water pumped into the San Joaquin River. Prior to use of SWP facilities, the Department would need to make an assessment of the quantity of "real" water that would be transferrable and also make a legal finding as described by the Department's water transfer evaluation letter (Appendix A). In addition, a wheeling agreement would need to be executed between the Department and the transferee.

Option 8 - Bravo Management Company

No comments.

Appendix A

Appendix A is titled "Draft Criteria For Evaluating Water Transfer Through Facilities of the State Water Project." The Department's draft form letter included in Appendix A does not contain water transfer "criteria" and should instead be titled "Water Transfer Evaluation Letter for the Use of State Water Project Facilities to Transfer Water."

CITY of MODESTO
Public Works & Transportation Department:
Utilities Division (209) 577-5470

P. O. Box 642, Modesto, CA 95353
(TDD (209) 526-9211 Hearing and Speech Impaired only)

April 21, 1997

Kirk Ford, Environmental Coordinator
Stanislaus County
1100 H Street
Modesto, CA 95354

Re: **Notice of Preparation Diablo Grande Water Plan**

Dear Mr. Ford:

Thank you for the opportunity to comment on the Notice of Preparation of a Supplemental EIR for Diablo Grande. We would like to submit just a few brief comments:

1. Option 3, Algal Turf Scrubbing, is a water treatment technology. The Draft EIR should address in significant detail how a treatment technology will result in an increased water supply. This is a relatively uncommon treatment technology. Attachment of engineering studies for the project would be helpful in assessing the technological feasibility of this environmental mitigation.

   If the project depends on conveyance by means of natural water ways, the DEIR should address the impact of both flow and pollutant loading on the regional surface and groundwater supply balance. This would be especially significant once the Inland Surface Waters Plan is completed, which sets extremely low pollutant thresholds for discharges to surface waters.

   If the project depends on pipeline conveyance, the DEIR should then address the ability of ATS to achieve water quality standards for the resulting beneficial uses, under existing and pending water quality standards. This technology has been tried on nutrient removal, but it will be helpful in the DEIR if a discussion of other pollutant removal efficiencies is presented. What data is available showing the ability of ATS to handle metals, organics, and pathogens such as viruses?

2. Option 3 relies on converting treated wastewater effluent into a domestic water supply. The DEIR should address the public health and safety concerns this may raise.

3. Option 3 places great reliance on a conversion of Modesto's wastewater to this new use. Modesto currently reclaims and beneficially reuses up to 100% of its treated wastewater each year for

Kirk Ford
Notice of Preparation
Page 2

agricultural irrigation. The City of Modesto is just beginning to look at several significant opportunities for its next generation of reclaimed water. It may be premature to rely on Modesto for Diablo Grande's needed water supply. There are significant regional policy issues which would have to be evaluated by the Modesto City Council in this regard.

4. In any of the options, the Water Resources Plan does not include a water balance for the impacted surface and groundwater supplies. The surface watershed is commonly considered to be completely allocated, and possibly subject to reductions in available diversions due to the Bay-Delta proceedings. The groundwater basin is also known to be overdrafted. Modesto is a participant in significant water projects intended to bring the groundwater supply back into balance. The DEIR should calculate and demonstrate the impact that the various options would have on the groundwater supply as well.

5. Under cumulative effects, it would also seem prudent for the DEIR to take into consideration the various solutions being considered by the Bay-Delta Proceedings to better balance the entire state's water supply and deal with the projected shortages. The Bay-Delta measures may add to the definition of the institutional and hydraulic rules under which Diablo Grande's water supply would operate.

6. The Notice of Preparation did not indicate to what extent the DEIR will discuss the concept of "irreversible commitment of resources" with respect to the various alternatives, as required by CEQA. It would be helpful to see an assessment of what measures can be built into the project should it turn out that the best hydraulic and water quality models don't work out in reality. Are there fail-safes, milestone measurements, or reversible components that could be included as mitigations should environmental impacts greater than forecast be observed?

The next era of water supply in California is certain to be very interesting and challenging. The proponents of Diablo Grande have taken significant steps to help find innovative solutions to California's water supply. For this reason, I will be looking forward to the Draft EIR. Thank you.

Sincerely,

A Tulloch

Alice Tulloch, PE

cc Brian Smith, Principal Planner
Don Milam, Junior Civil Engineer
Van Switzer, Acting Public Works and Transportation Director

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CITY of MODESTO
Public Works & Transportation Department:
Utilities Division (209) 577-5470
P. O. Box 642, Modesto, CA 95353
TDD (209) 526-9211 Hearing and Speech Impaired only!

April 8, 1997

Kirk Ford
Environmental Coordinator
Stanislaus County Department of Planning and Community Development
1100 H Street
Modesto, California 95354

Re: Comments on the *Water Resources Plan for Diablo Grande*

Dear Mr. Ford:

Upon reviewing the *Water Resources Plan for Diablo Grande*, the City of Modesto would like to make the following comments:

- The City of Modesto Secondary Treatment Plant, designated as 3-3, is incorrectly located on Figure 1.
- The City of Modesto Secondary Treatment Plant is located downstream of Marshall Road.
- Please clarify the conveyance of the treated effluent from the City of Modesto ATS Option-3.
- In 1995, a total 8,408 mg of treated effluent was discharged to the San Joaquin River or was used to irrigate the city-owned pasture land. Of the 8,645, approximately 2,431 mg was used to irrigate pasture land and 5,614 mg was discharged to the San Joaquin River.

If you have any questions, please feel free to contact me at the above number.

Sincerely,

Antonio S. Tovar

Antonio S. Tovar
Assistant Civil Engineer

pat_ ecl.doc

TURLOCK IRRIGATION DISTRICT
333 EAST CANAL DRIVE
POST OFFICE BOX 949
TURLOCK, CALIFORNIA 95381
(209) 883-8300

April 4, 1997

Kirk Ford, Environmental Coordinator
Stanislaus County Planning & Community Development
1100 "H" Street
Modesto, CA 95354

RE: Diablo Grande Water Plan Supplemental EIR

Dear Mr. Ford:

Enclosed please find the Turlock Irrigation District environmental review comments for the subject project. We appreciate the opportunity to comment on this project. If you have comments or questions, please contact me at (209) 883-8316.

Sincerely,

TURLOCK IRRIGATION DISTRICT

Wilton B. Fryer, P.E.
Water Planning Department Manager

enclosure

I:\WP\BOB.97\WIL\SEIR0402.LTR

060910-03

TURLOCK IRRIGATION DISTRICT

WATER PLANNING DEPARTMENT

MEMORANDUM

DATE: 2 Apr 1997
TO: Kirk Ford c/o
Stanislaus County Planning & Community Development
FROM: Wilton Fryer, Department Manager
SUBJECT: Diablo Grande Water Plan SEIR

The subject SEIR describes eight options to provide the Diablo Grande development permanent water supply sources. Options 3-2, 3-3, and 4 are subject to review by the Turlock Irrigation District. Only long term impacts are discussed. Short term and single time impacts related to construction of facilities, particularly under or over District canals and drains, are considered mitigated in the construction permit process. Specific comments on each option are as follows.

Option 3-2 Algal Turf Scrubber - City of Ceres

XXX May have a significant effect on the environment.

Impact: The TID annually receives approximately 200 to 250 acre feet of treated effluent from the City of Ceres for use as boiler feed water in the Almond Power Plant. The District is entitled to take up to the first 400 acre feet of the highest quality treated effluent available. Loss of this water supply would require replacement from groundwater pumping. The potential impact could be an increase in localized groundwater pumping.

Mitigation: Leave 400 acre feet of treated effluent available to the TID per the current agreement with the City of Ceres.

Comment: The City of Ceres no longer irrigates any agricultural lands in the TID with treated effluent.

Option 3-3 Algal Turf Scrubber - City of Modesto

XXX May have a significant effect on the environment.

Impact: The City of Modesto irrigates 1,200 acres of land in the TID with approximately 5,000 acre feet of treated effluent. Loss of this water supply would require replacement from either groundwater pumping or surface

deliveries. The potential impact could be an increase in localized groundwater pumping. There would be minimal impact, if the water supply was made up through an addition in the diversion of surface water from the Tuolumne River.

Mitigation: The City of Modesto has lands outside the TID that are also irrigated with treated effluent. The transfer of this water to Western Hills Water District would leave the current supplies available to lands within the TID.

Option 4 Shallow County Groundwater

XXX May have a significant effect on the environment.

Impact: The TID has installed shallow drainage wells in the area shown in Fig. 6 of the SEIR. This water is recovered for irrigation use to the fullest extent possible. The TID practices conjunctive water use between surface and groundwater supplies. In drought years (6 out of 10 years) this drainage water can be a significant portion of the overall irrigation supply in the area. Given the extent of the high groundwater area, the export of 12,000 acre feet of drainage water to WHWD is not anticipated to be a significant impact, unless there is interference between WHWD and TID wells. The extraction of this added drainage water could provide a localized reduction in the drainage pumping required by TID.

Mitigation: The wells used to supply WHWD should be located and designed to minimize the localized interference with TID drainage wells used to supply supplemental irrigation water.

Distribution: Bob Nees
Brian LaFollette

I:\WP\STUDIES\DIABLO\SEIR0396.MEM

STAN, MEDCLAWICK

RECEIVED
MAR 17 1997
STANISLAUS CO. PLANNING & COMMUNITY DEVELOPMENT DEPT.

TO: Stanislaus County Planning & Community Development
1100 "H" Street
Modesto, CA 95354

FROM: ______

REGARDING ENVIRONMENTAL REVIEW COMMENTS:

PROJECT TITLE: Diablo Grande Water Plan Supplemental EIR
APPLICATION NO. N/A
PROJECT DESCRIPTION: Attached

Based on this agencies particular field(s) of expertise, it is our position the above described project:

✓ Will not have a significant effect on the environment.
___ May have a significant effect on the environment.
___ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) - (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts:

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

______

______

Response prepared by:

Beverly Kirby — Managing Director — 3/14/97
Name — Title — Date

sN:

C:\OFFICE\WPWIN\WPDOCS\DIABLO\DG0167-E.MEM

WEST STANISLAUS COUNTY FIRE PROTECTION DISTRICT

P.O. Box 565, Patterson, CA 95363
(209) 892-5621

Richard G. Gaiser
Fire Chief

March 17, 1997

To: Stanislaus County
Department of Planning and Community Development
1100 "H" Street
Modesto, California 95354

Re: West Stanislaus County Fire Protection District's comments with regard to **DIABLO GRANDE WATER PLAN SUPPLEMENTAL EIR**

After review of the proposed action, it is felt that this action will have a cumulative effect upon the ability of the West Stanislaus County Fire Protection District to continue to provide existing services. Therefore, in order to mitigate that effect, the District requires the following:

1) Applicant enter into an agreement with the Fire District to pay the Fire District's standard, annual benefit assessment on all new parcels; and

2) Applicant to pay the Fire District's standard development fees on any new construction on any of the newly created parcels.

Should there be any questions on this issue, please contact this office.

Respectfully,

Richard G. Gaiser
Fire Chief

ROBERT E. SMITH
Director
WILLIAM
NICHOLSON
Assistant Director

PLANNING DEPARTMENT

2222 'M' STREET
MERCED, CALIFORNIA 95340
TELEPHONE (209) 385-7654
FAX (209)726-1710

March 17, 1997

Kirk Ford, Environmental Coordinator
Stanislaus County Department of Planning and Community Development
1100 H Street
Modesto, California 95340

SUBJECT: DIABLO GRANDE WATER PLAN SUPPLEMENTARY EIR

Dear Mr. Ford:

Thank you for referring the Notice of Preparation of the Diablo Grande supplementary EIR to this office.

Merced County is concerned that a project of this magnitude, with several of its water importation alternatives, may have a detrimental effect on this county's surface or groundwater supplies. We request that the EIR examine the potential effects of the water plan on Merced County's municipal, industrial, and agricultural water sources.

A member of Merced County Planning staff will attend the scoping meeting on April 2nd. Thank you.

Sincerely,

Desmond Johnston
Environmental Coordinator

cc: Joe Rivero, Chairman, Board of Supervisors
Greg Wellman, CAO

Del Puerto Hospital

Patterson's Not-For-Profit District Hospital

P.O. Box 187
Patterson, CA 95363
(209) 892-8781

March 12, 1997

Stanislaus County
Planning and Community Development
1100 H Street
Modesto, CA 95354

Re: Diablo Grande Water Plan Supplemental EIR

To Whom it May Concern:

The Del Puerto Healthcare District entered into a mutual benefit agreement with the Diablo Grande Limited Partnership on October 27, 1993. This agreement was recorded with Stanislaus County on February 7, 1994. The District maintains this agreement to mitigate the project's impacts upon our District. While this mutual benefit agreement remains effective and honored, the Del Puerto Healthcare District has no further mitigation requests.

Please contact me with any questions.

Sincerely,

Michael Petrie
Chief Executive Officer

TO: Stanislaus County Planning & Community Development
1100 "H" Street
Modesto, CA 95354

FROM: Arthur B. + Nancy T. Francis

REGARDING ENVIRONMENTAL REVIEW COMMENTS:

PROJECT TITLE: Diablo Grande Water Plan Supplemental EIR
APPLICATION NO. N/A
PROJECT DESCRIPTION: Attached

Based on this agencies particular field(s) of expertise, it is our position the above described project:

X Will not have a significant effect on the environment.
___ May have a significant effect on the environment.
___ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) - (attach additional sheet if necessary)

1. NONE
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts:

1. NONE
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

We feel that the environment will not be harmed in any way.

Response prepared by:

Arthur B Francis — Name
Owner — Title
3-9-97 — Date

owner of 40 acres adjacent to the project in question

RECEIVED
MAR 13 1997
STANISLAUS CO. PLANNING & COMMUNITY DEVELOPMENT DEPT.

C:\OFFICE\WPWIN\WPDOCS\DIABLO\DG0167-E.MEM

CEN. AL CALIFORNIA INFORMATION CE ER
California Historical Resources Information System
Department of Anthropology
California State University, Stanislaus
801 W. Monte Vista Avenue, Turlock California 95382
(209) 667-3307 / FAX (209) 667-3324

Alpine
Calaveras
Mariposa
Merced
San Joaquin
Stanislaus
Tuolumne

CULTURAL RESOURCE PREPROJECT REVIEW

TO: Stanislaus County Department of Planning and Community Development
Date: 3/10/97
CCIC File #: 97-4

RE: Diablo Grande Water Plan-Notice of Preparation Supplemental EIR

Records at the Central California Information Center of the California Historical Resources Information System have been reviewed to determine if this project would adversely affect prehistoric or historic resources:

___ The proposed project area has not been surveyed for cultural resources and contains or is adjacent to known cultural resources. A Phase I survey is recommended. This entails a full records search at the CCIC, direct field survey and submission of a report of findings following guidelines for Archaeological Resource Management Reports prepared by the California Office of Historic Preservation, *Preservation Planning Bulletin* 4(a), December, 1989.

___ Based on existing data the proposed project area has the potential for containing cultural resources. A Phase I survey is recommended.

___ A Phase I archaeological survey has already been conducted and the results were: ___positive ___negative
___ An Historic Resource Inventory has been conducted and the results were: ____positive ____negative
___ No further study is recommended.

___ There is a low possibility of cultural resources. Further study is not recommended

XXIf, during the course of project-related activities, cultural resources are encountered, work should be halted or diverted in the immediate vicinity of the find while a qualified archaeologist and/or historian evaluates the find and makes recommendations. SEE BELOW.

Comments:

If the proposed water plan involves the breaking of new ground that has not been subject to previous cultural resources investigations, we hereby recommend that at a minimum a records search be conducted at an appropriate Information Center and field survey by a qualified archaeologist be conducted if any areas that appear to be culturally resource sensitive will be affected by this project.

If you have any questions, please call the Information Center at (209) 667-3307.

Sincerely,

E Greathouse

Elizabeth Greathouse, Coordinator
Central California Information Center

TO: Stanislaus County Planning & Community Development
1100 "H" Street
Modesto, CA 95354

FROM: Stanislaus County Redevelopment Agency

REGARDING ENVIRONMENTAL REVIEW COMMENTS:

PROJECT TITLE: Diablo Grande Water Plan Supplemental EIR
APPLICATION NO. N/A
PROJECT DESCRIPTION: Attached

Based on this agencies particular field(s) of expertise, it is our position the above described project:

___ Will not have a significant effect on the environment.
___ May have a significant effect on the environment.
_✓_ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) - (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts:

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

Response prepared by:

James Durral | Associate Planner | March 7, 1997
Name | Title | Date

C:\OFFICE\WPWIN\WPDOCS\DIABLO\DG0167-E.MEM

CENTRAL CALIFORNIA IRRIGATION DISTRICT

1335 West "I" Street / P.O. Box 1231
• Los Banos, California 93635 • (209) 826-1421 / FAX (209) 826-3184 •

April 3, 1997

Kirk Ford, Environmental Coordinator
Stanislaus County Department of Planning
and Community Development
1100 H Street
Modesto, CA 95354

Re: Diablo Grande Water Plan Supplemental EIR

Dear Mr. Ford:

This letter acknowledges receipt of the above-referenced document and we would like to comment on Option 4 - Shallow County Groundwater.

Central California Irrigation District lies on the westside of the San Joaquin River between the county line on the south, Patterson Water District to the north and Del Puerto Water District on the west.

The statement that due to the application of surface water has created a situation where the groundwater has raised to levels which affect the farmability of land is incorrect. The conjunctive use of surface water and groundwater in our District is very important tool for efficient water management. The District has several automated wells along our Main Canal to reduce spills. They come on when there is a demand for water in the area. Our growers have wells which are used during the summer, when demand on our canals is heavy and they would have to wait for water. District and private wells are used in the winter months after our surface supply has been used.

We are in the process of completing an AB 3030 groundwater study and that study is showing that our groundwater is in equilibrium. Therefore, if Diablo Grande pumps for export, they will have an impact on the conjunctive use program in the area.

Please keep CCID on your mailing list so that we may comment prior to the completion of the supplemental EIR.

Very truly yours,

Mike Porter
General Manager

MP:mm

Stanislaus County Farm Bureau

1201 L Street • P.O. Box 3070 • Modesto, California 95353 • 209/522-7278

RON MACEDO
President

JAN ENNENGA
Executive Manager

Friday, April 4, 1997

STANISLAUS COUNTY DEPARTMENT
OF PLANNING & COMMUNITY DEVELOPMENT
KIRK FORD, ENVIRONMENTAL COORDINATOR
1100 H STREET
MODESTO, CA 95354

RE: Diablo Water Plan: Notice of Preparation of a Supplemental Environmental Impact Report

Dear Kirk:

Thank you for the opportunity to comment on the Notice of Preparation of the Supplemental Environmental Impact Report for a permanent source of water for Diablo Grande.

Attached please find our comments, jointly prepared with the California Farm Bureau Federation. Since the water supply issue has far reaching and precedent setting implications, we will reiterate our previously stated position: we have serious concerns with the long-term water supplies for Diablo Grande, but we will assist the developers with attaining a water supply as long as it will not adversely affect the water supplies that are critical to California's farmers and ranchers.

Again, our comments are attached. We look forward to continuing to work with you and Diablo Grande project proponents in this process.

Sincerely,

Ron Macedo
RON MACEDO
PRESIDENT

Al Brizard
AL BRIZARD
WATER COMMITTEE CHAIRMAN

cc: Board of Supervisors
David J. Guy, CFBF Counsel
Russ Newman, Esquire, Normoyle and Newman

Del Puerto WATER District

P.O. Box 45 • [illegible] CA [illegible] Fax [illegible] • Phone (209) [illegible]

April 4, 1997

Kirk Ford, Senior Planner
Stanislaus County Planning Department
1100 "H" Street
Modesto, CA 95354

Re: Diablo Grande Supplemental EIR

Dear Mr. Ford:

These comments are submitted on behalf of Del Puerto Water District, a contractor of CVP water from the Delta-Mendota Canal, and on behalf of the Oak Flat Water District, a contractor of the State Water Project from the California Aqueduct, and their respective landowners (hereinafter collectively called the "Districts").

The jurisdictional responsibilities and expertise of the Districts are in the area of surface water and groundwater management and distribution, and water quality. We have assumed certain responsibilities through adoption of an AB 3030 "Groundwater Management Plan for the Northern DMC Subbasin," which is currently in the Phase I monitoring and data gathering.

As expressed by myself at the April 2, 1997 scoping meeting, we continue to have concerns about the proposed project and offer these comments for the purpose of helping the drafters of the Supplemental EIR better define and evaluate the potential impacts arising from various options being considered. These comments, or the lack of comments, should not be construed as an endorsement or opposition at this point to any particular option being considered.

The comments following are organized in accordance with the options identified in the Notice of Preparation and accompanying Water Resources Plan prepared for Western Hills Water District, dated February, 1997.

Option 1 - Marshall-Davis Farms. We understand from the outline that there is no proposal to extend this temporary arrangement under which Diablo Grande can pump up to 1200 acre-feet per year for the years 1996 through the year 2000. If there was any attempt to increase the amount of pumping and/or extend the term through which pumping can occur, such proposal would require extensive evaluation, and in our view would inevitably be determined to be a significant adverse environmental impact. In our judgment the program is already having an adverse impact on groundwater conditions whcih would be particularly evident if we were to enter into a series of dry years. For this reason, we wish to see that this option not extend beyond that which has previously been authorized and agreed to.

Option 3-1, 3-2, and 3-3 - Algal Turf Scrubber. We assume that through the Supplemental EIR the specific proposed alignment for each of the alternatives of the

pipeline leading from the San Joaquin River will be specifically identified, and therefore what landowners might be affected. In determining such alignment, every effort should be made to mitigate potential impacts on landowners and landowners' irrigation and drainage facilities.

Option 4 - Shallow County Groundwater. Contrary to the information provided, we are unaware of shallow groundwater supplies within the Del Puerto Water District, except for possible de minimus amounts. Extraction of these supplies may also have impacts on surrounding or upslope groundwater supplies and/or impact the quantity and quality of return flows to the San Joaquin River.

Option 6 - Mercy Springs Water District. If a transfer were available from Mercy Springs Water District (for which we understand other contractual arrangements have already been made) or from other agricultural contractors on the Delta-Mendota Canal or San Luis Canal, the impacts on the water supply on the remaining agricultural users must be examined. In this regard, we note at the top of page 3-9 that the authors of the Water Resources Plan have assumed that M & I supplies, after being converted from agricultural uses, would not be subject to the same shortage provisions. Such an assumption is not necessarily correct, and if this were the case, because south of the Delta supplies are limited would result in adverse supply impacts to others. Alternatives such as local banking arrangements should perhaps be examined to meet urban water demands in times of shortage, so as not to further increase shortages to agricultural contractors.

Option 7 - Oakwood Lake Water District. The impacts on Delta outflow and/or export pumping if approximately 6,000 acre-feet is transferred out of the Delta, which historically has flowed to the Delta, must be examined, regardless of whatever determinations the State Board may have already made.

Conclusions. We note in the conclusions of the Water Resources Plan that the authors make projections with respect to the outcome of the Cal-Fed process and expect "significant" improvement in transfer opportunities from the Sacramento Valley. We believe it is too early to determine the outcome of the Cal-Fed process, and certainly any analysis of various alternatives examined should not count on any particular outcome of the Cal-Fed process.

If your office or the authors of the Supplemental EIR require any further additional information with which we can assist, please do not hesitate to contact us.

Very truly yours,

William D. Harrison, General Manager
Del Puerto Water District
Oak Flat Water District

cc: Boards of Directors

Comments of California Farm Bureau Federation
and Stanislaus County Farm Bureau
Regarding Diablo Grande Water Plan/Supplemental EIR
April 2, 1997

The appellate court in *Stanislaus Natural Heritage Project v. County of Stanislaus* issued a very strong mandate to Stanislaus County and the Diablo Grande proponents regarding a water supply for the project. The "environmental impact report (EIR) shall include a detailed statement setting forth . . . *all* significant effects on the environment of the proposed project." ((1996) 48 Cal.App. 4th 182; Pub. Res. Code § 21100(b)(1).) Most importantly, the EIR must analyze the potential effects of a water supply from a particular source or possible sources, and if the effects are adverse, how they will be addressed. (*Id.* at 206.)

I. FARM BUREAU POLICY

Agriculture depends upon two primary inputs: land and water. Without either land or water, agriculture will cease to exist. For this reason, Farm Bureau's land use policy encourages new development, such as Diablo Grande, away from prime agricultural lands.

With respect to water, it is very important that all new development must have a water supply that is both physically and legally available for the project. Unlike past days in California, where water was more plentiful, the County and developers must show up-front in the planning process that there is a water supply that is both legally and physically available and that other water users, such as farmers, will not be affected by this new use. Otherwise, the water equation in California is rather simple and predictable--valuable agricultural water supplies will be taken from farmers and ranchers to satisfy new development. For this reason, Farm Bureau sponsored the Water Supply Planning Act (Water Code §10910 *et seq.*), which was known as S.B. 901 in 1995.

In light of Farm Bureau policy, we will assist the County and Western Hills Water District secure a water supply for Diablo Grande, but in return, the water supply for Diablo Grande must not have *any* impacts on the water supplies that California's farmers and ranchers rely on for their livelihood and way of life. In the context of CEQA and the proposed EIR, this means that any potential effects on both agricultural land and water must be fully analyzed in the EIR, since land without water cannot sustain agriculture and its attendant open-space values. Appendix G to the State CEQA Guidelines lists many significant effects on agriculture that must be addressed in the EIR. (*See* State CEQA Guidelines, Appendix G(b),(f),(h),(i),(k),(n), and (y).) These Guidelines make it clear that agricultural lands and the related water supply are an important part of the environment that must be considered in the EIR. In the final analysis, Farm Bureau can only support and the County can only approve, an alternative that will have no negative effects on farmers and ranchers.

II. SPECIFIC COMMENTS

To assure that farmers and ranchers will not be negatively impacted by Diablo Grande, the preferred alternative for a water supply must: (1) not include the Marshall-Davis wells or any aquifer that farmers rely upon for their water supply; 2) be available on a permanent, on-going basis; 3) be available and deliverable during both hydrologic and regulatory drought; and 4) not interfere with or jeopardize the satisfaction of any water quality standards.

A. No pumping from Marshall-Davis or other westside wells

Our position on the Marshall-Davis wells has been unequivocal since 1993 when we became concerned with the water supplies for Diablo Grande. As a result of discussions with the Diablo Grande proponents, we reached an agreement that groundwater pumping would *not* be continued nor considered for this project after the five-year period ends in 2001. (*See* attached letter to Supervisor Blom.) Farm Bureau has acted in good faith to honor our part of the agreement. We hope that the County and the developers will be true to their word and thus avoid any legal action to protect the groundwater resources that are critical to farmers.

B. Diablo Grande water supplies must be permanent

The water supply alternatives that are being discussed for Diablo Grande are not long-term as suggested by the water plan, but instead are a *permanent* water supply. This is an important distinction, since the water that will be used for Diablo Grande will never be available for other uses, such as agriculture. Because of the permanence of this water supply, the level of scrutiny given to the water supply impacts should be commensurate with this planning horizon.

This is particularly important when considering wheeling by either the Bureau of Reclamation or the Department of Water Resources through their existing facilities. When considering that the preferred alternative will be a *permanent* water supply, it will be nearly impossible for either the Bureau of Reclamation or the Department of Water Resources to guarantee, at least on a permanent basis, that there will be "unused capacity" in their facilities to assure reliable water deliveries to the project. (Water Code § 1810.) If a permanent guarantee cannot be made up front that an alternative will be delivered for this project, then this immediately points to the problem that was previously discussed, where other water supplies, such as groundwater, will be looked at to satisfy the project's thirst during years in which water cannot be delivered through these facilities. This type of a contingency cannot be tolerated since the potential impacts to the environment, including agricultural water users, is extremely significant and short-sighted. The preferred alternative must truly be a permanent supply.

C. Western Hills must be able to provide water during both hydrologic and regulatory drought

It is easy, on the heels of three consecutive wet years, to get lulled into thinking that

there is plenty of water available for use on the westside of the San Joaquin Valley. Yet, we know that this is not the case. It was only six years ago (in 1991) that agricultural contractors for the State Water Project were scheduled to receive a *zero* allocation. Even after three consecutive wet years, westside farmers may only receive 80% of their contract allotment. (*See* attached article.) Like many others, we are optimistic that the Cal-Fed process will result in a solution that will provide more reliable water to the westside of the San Joaquin Valley. Yet, the reality at this time is that there is little water available on the westside to satisfy existing water users. This is a function of both hydrologic and regulatory drought. To avoid significant effects on agriculture, the water supply for Diablo Grande must not only be permanent in time, but it also must be both physically and legal available to the project under *all* regulatory regimes and during all water year types, including critically dry years.

D. Water Supply cannot interfere or jeopardize the satisfaction of water quality standards

California's farmers and ranchers are increasingly being required to forego or release water to satisfy water quality standards. This is particularly true in the San Joaquin Valley as the numerous demands for water have increased dramatically. Any water supply alternative that degrades or adversely affects water quality will therefore affect farmers and ranchers by ultimately requiring additional flows. For this reason, the preferred alternative cannot in any way interfere with or jeopardize water quality standards, including those set by the State Water Resources Control Board at Vernalis on the San Joaquin River.

III. COUNTY APPROVAL

The County cannot approve residential development as part of Diablo Grande until there is a permanent water supply that is both legally and physically available to the project on a permanent basis during all types of water years. This means that the County can prepare a program level EIR to support program level approvals, but it still cannot approve *any* residential development until a site-specific EIR has been certified which supports findings by the County that there is a permanent water supply available for the Diablo Grande project that not only satisfies the above-mentioned requirements, but will also not affect any farmers or ranchers. We look forward to working with the County and the project proponents in this process.

West side faces water rollbacks

■ Dry February presents farmers with the prospect of paying more than expected for deliveries.

By Pamela J. Podger
Bee Capitol bureau

Farmers on the west side are bracing for cutbacks from full water supplies after learning that a dry February may force federal officials to revise their expected deliveries.

The Westlands Water District, which was promised full supplies on Feb. 15, now faces possible rollbacks to around 80 percent.

Farm communities that were deluged by severe January storms now ponder the ironic prospect of having to purchase water, at higher costs, to grow crops already in the ground.

Federal officials who operate the Central Valley Project, which shunts water to the west side, say they will announce the final supplies in April.

After a December and January that were among the wettest months this century, February was the sixth driest on record, said Jeff McCracken, spokesman for the U.S. Bureau of Reclamation, which operates the CVP.

McCracken said the bureau made substantial releases from state reservoirs based on expected storms that never materialized. Millerton Lake has about 266,000 acre-feet in storage, or about 79 percent of normal. At this time last year, Millerton had 493,000 acre-feet.

"If we don't get any additional rain, we could face some cutbacks," McCracken said.

David Orth, general manager at Westlands, said the district's water models show the federal water supplies at 100 percent, even if conditions remain dry. He said most farmers have plotted out their

Please see Water, Page B2

3/24/97 SEE INSERT

Water: Allocation reduction possible

Continued from Page B1

crops and planting plans and have completed their banking arrangements. Any significant cutback would be difficult, Orth said.

"We think it is premature to talk about any reduction in the allocations," Orth said. "We have had very dry conditions, and I share their concerns. But the bureau needs to do its April snowpack survey and then do their re-evaluation."

Farmers farmers on the west side are annoyed by the prospects of less water and possible increased costs. Many fields have been planted with garlic, cotton, onions and tomatoes.

"It's not fair," said Fresno County farmer Jim Walker of Walker Farms. "If the water is there, we should be able to get water at our district cost."

Dan Errotabere said the bureau may have overcommitted itself with the full forecasts, at the expense of farmers. Instead of the $40 an acre-foot they usually pay, farmers on the west side might have to ante up $50 to $70 an acre-foot for water transferred from northern regions.

"With everybody making plans at 100 percent, the need level will be great," Errotabere said.

Erick Johnson of Harris Farms in Coalinga said the problem lies in environmental restrictions.

"If we get anything less than 100 percent supply it is because some bureaucrat or [Interior Secretary] Bruce Babbitt decided to give water to so-called environmental purposes rather than the farmers that were counting on getting water this year," Johnson said.

California Farm Bureau Federation

Office of the General Counsel

1601 Exposition Boulevard, FB3 • Sacramento, CA 95815-5195

Telephone (916) 924-4035 • FAX (916) 923-5318

October 19, 1993

HAND DELIVERED

The Honorable Nick Blom
Board of Supervisors
Stanislaus County
1100 H Street
Modesto, CA 95354

Re: Diablo Grande Project-Water Issues

Dear Chairman Blom:

The California Farm Bureau Federation and Stanislaus County Farm Bureau (collectively Farm Bureau) are very concerned about the proposed water supply for the Diablo Grande project. It was our intent in our September 1 letter to the Planning Commission, as it is today, to assure that the project will not seriously impact the water supplies which farmers, ranchers and their communities depend upon. As you well know, agriculture in Stanislaus County contributes over three billion dollars to the local and state economy, plus the open-space and wildlife values attendant to agricultural lands.

Groundwater on the westside of Stanislaus County is increasingly becoming important as surface deliveries from the Delta-Mendota Canal have been reduced. These reductions in the federal contract allocations have a two-fold impact. First, less surface water means farmers will rely more upon groundwater pumping, and second, less surface application of water means less recharge to the groundwater aquifer. Considering the existing restraints on pumping at the Tracy plant to fill the Delta-Mendota Canal, this situation will likely continue for many years. Groundwater is the lifeblood of agriculture, and quite simply, once the groundwater is not available, farming in this area will cease to exist along with the communities which rely upon agriculture.

Farm Bureau is <u>not</u> opposed to the Diablo Grande project, but as previously mentioned, we are concerned about the water supply impacts to westside farmers. In light of this, we have made good faith efforts to work with County staff and the project proponents to resolve any differences with respect to the water issues. First, on September 24 we met with project proponents in an attempt to more fully understand the project, and particularly its water needs and potential supplies. After listening carefully to the project proponents and expressing our concerns at the meeting, we sent an October 6 letter to Counsel for the project. This began a series of discussions through which we came to the agreement which has been presented for approval today. Enclosed for the record is the correspondence and accompanying proposals which led up to this agreement.

Nancy N. McDonough, *General Counsel*

Associate Counsel:

Carl G. Borden • Steven A. Geringer • Carolyn S. Richardson • Karen Norene Mills • David J. Guy

Our basic position throughout these discussions has been that we will trust the assurances by the project proponent that it will attain its promised long-term water supplies, as long as the farmers' groundwater supplies are protected in this process. To protect this important groundwater resource, while allowing for the project to proceed, we have agreed with the project proponent that the following provisions be included in the Specific Plan and the Mitigation and Monitoring Plan:

1) Limit the pumping at the Marshall-Davis wells to 1,200 acre-feet per year in any event;

2) Limit the pumping to five years from the original date of pumping from the Marshall-Davis wells, except in certain very limited emergency situations; and

3) Allow no residential use of the groundwater;

The reasons for these conditions are as follows. First, the project proponents have indicated that we should all be confident in their long-term water supplies, and as evidence of this, they have publicly indicated that they would be willing to forego their reliance on the groundwater for the project after five years. Frankly, we remain very concerned about their dubious long-term water supplies, but we will go along with the proponents in good faith if they are good for their word. This will require Western Hills Water District to actually forego the groundwater after five years. To actually ensure that the project proponents carry this out, the groundwater pumping must actually cease after five years. To accomplish this, the pipelines from the Marshall-Davis wells to the project should be dismantled. Otherwise the temptation will always exist to continue the use of groundwater for the project to the detriment of the farmers. But after planning staff's indication on several occasions that the dismantling is not a proper requirement in the planning process, as well as our attempt to be reasonable, we have allowed the pipeline to remain as long as it is used only for emergency purposes. As the new language to be incorporated into the Specific Plan reads, emergency shall only include "shut downs related to physical failures of water conveyance facilities..., but in no event shall an emergency include the lack of available water for any other reason." Western Hills failure to secure water for the project for any reason not related to physical failures is therefore not an emergency. Any regulatory or legal restraints on Western Hills ability to obtain water is clearly not an emergency circumstance.

Second, there remains a far-reaching question for development such as Diablo Grande. Remember that the Specific Plan is essentially a General Plan Amendment, it is not a specific use permit. Should Stanislaus County allow for residential development without a proven and adequate water supply? Again, we do not oppose development as long as it does not impact farmers and their communities. Yet as a realistic matter, once residential dwellings are constructed as a part of the Diablo Grande or any other residential development, the residences will be assured of a water supply. In other words, we all know that the water supply will not be cut off to the homes once they are inhabited. This water will likely come out of agriculture's present allocation. It is therefore important that these residences do not rely upon the Marshall-Davis groundwater and that before these residential dwellings are approved, an adequate and real water supply is available which will not impact the farmers in the County. This concern applies equally to all future matters before you with similar circumstances.

In sum, if the reasonable conditions which we have proposed to the project proponents in our October 15, 1993 letter are incorporated in the final version of the Specific Plan and Mitigation and Monitoring Plan, then in our estimation, the water supply issues have been addressed to the extent possible in the planning process. We are glad to have been part of this process. If we can assist you in any way, please do not hesitate to call.

Sincerely yours,

DAVID J. GUY

DJG/gt
DJG/L101193
cc: Board of Supervisors
Paul Caruso
Tom Mayfield
Pat Paul
Ray Simon
Planning Department
Ron Freitas, Director
Bob Kachel, Senior Planner
Stanislaus County Farm Bureau
Paul Wenger, President
Jan Ennenga, Executive Manager
Russ Newman, Esq.
(all hand delivered)

San Joaquin Valley
Unified Air Pollution Control District

Fax Transmittal

4230 Kiernan Avenue, Suite 130
Modesto, California 95356
Phone (209) 545-7000 Fax (209) 545-8652

Date: 4/7/97

To: Kirk Ford Fax Number: 525-5911

From: Tracy Roemer Number of pages (including cover sheet): 4

Description: Comments regarding the Notice of Preparation of the SEIR for the Diablo Grande Water Plan

- ☐ Per Your Request
- ☐ Per Our Conversation
- ☐ Take Appropriate Action
- ☐ Please Answer
- ☒ For Your Information
- ☐ For Your Approval
- ☐ Review & Comment
- ☐ Review & Return

☒ Original transmittal will follow via mail

Remarks / Response: Please call me if you have any questions regarding these comments.
Thank you,
Tracy

FAXFORM XI S(rev. 2/1996)

San Joaquin Valley
Unified Air Pollution Control District

April 8, 1997

Kirk Ford
Stanislaus County
Department of Planning and
Community Development
1100 "H" Street
Modesto, CA 95354

SUBJECT: NOTICE OF PREPARATION OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR THE DIABLO GRANDE WATER PLAN

Dear Mr. Ford:

The San Joaquin Valley Unified Air Pollution Control District has reviewed the proposed project and offers the following comments:

The San Joaquin Valley has been designated serious-nonattainment by the US EPA for O_3 (ozone) and PM-10 (particulate matter, dust). The California Air Resources Board (CARB) has designated the Valley as severe-nonattainment for O_3 and nonattainment for PM-10. The Federal Clean Air Act and the California Clean Air Act require areas that are designated nonattainment to reduce emissions until standards are met.

Based on the information provided in the Notice of Preparation, it has been determined that air quality will be negatively impacted by utilizing the Algal Turf Scrubbing Alternative for the Diablo Grande Water Plan. However, implementing any of the potential alternatives will generate construction emissions related to heavy equipment use (oxides of nitrogen, NOx and reactive organic gases, ROG) and excavation activities (particulate matter). As a result, the Supplemental EIR should analyze the following to the maximum extent feasible:

1) Provide a description of the regulatory environment and existing air quality conditions impacting the project area. The District has several sources of information available to assist with the existing air quality and regulatory environment section of the SEIR. The District's ***Air Quality Guidelines for General Plans***, although slightly outdated, contains discussions of the existing air quality conditions and trends of the

David L. Crow
Executive Director/Air Pollution Control Officer
1999 Tuolumne Street, Suite 200 • Fresno, CA 93721 • (209) 497-1000 • FAX (209) 233-2087

Northern Region
4230 Kiernan Avenue, Suite 130 • Modesto, CA 95356
(209) 545-7000 • FAX (209) 545-8652

Central Region
1999 Tuolumne Street, Suite 200 • Fresno, CA 93721
(209) 497-1000 • Fax (209) 233-2087

Southern Region
2700 M Street, Suite 275 • Bakersfield, CA 93301
(805) 861-2396 • Fax (805) 861-5201

San Joaquin Valley Air Basin, including those pollutants of particular concern (ozone, PM-10, and carbon monoxide). In addition, it provides an overview of the regulatory environment governing air quality at the federal, state, and regional levels. The ***1994 Serious Area PM-10 Plan*** contains information and control strategies for PM-10. In addition, the District can provide air monitoring data and other relevant information.

2) The SEIR should identify the sources of pollutants (i.e. the equipment which will be used in this operation -- both stationary and mobile) and quantify the emissions which will be generated from these sources.

3) Please analyze PM-10 generation attributed to construction related activities (i.e. grading, excavating, hauling of bulk materials, etc.). Please note: to prevent excess PM-10 entrainment into the ambient air, excavated areas should be rehabilitated in a timely fashion. Please provide an approximate time line for this project's duration including rehabilitation of the excavated areas along with the measures that will be taken to reduce the generation of wind-blown dust (i.e. planting vegetation to stabilize soil, watering project area, etc.).

4) Ozone precursor (ROG and NOx) and carbon monoxide generation attributed to heavy equipment use during construction activities must be included in the SEIR.

5) This project may have the potential to emit odors resulting from the algal turf scrubbing activities or any other processes utilizing effluent. Please include an analysis along with measures designed to reduce offensive odors.

6) An Authority To Construct (ATC) and Permit To Operate (PTO) may be required for some the alternatives outlined in the NOP. The applicant is advised to contact the District's Permit Services Division to obtain appropriate approvals prior to construction.

7) Any sensitive receptors (a location where human populations, especially children, seniors, and sick persons are found) located within the project vicinity must be identified. The location of sensitive receptors should be explained in terms that demonstrate the relationship between the project site and potential air quality impacts.

8) Mitigation measures must be included in the SEIR that reduce the emissions of reactive organic gases, nitrogen oxides, carbon monoxide and PM-10.

Thank you for the opportunity to comment on this NOP. Please feel free to contact me at (209)545-7000 for any additional assistance in this matter.

Sincerely,

Tracy N. Roemer

Tracy N. Roemer
Environmental Planner
Northern Region

APCD REF # 970083

TO: Stanislaus County Planning & Community Development
1100 "H" Street
Modesto, CA 95354

FROM: DYNASTY GROWTH GROUP

REGARDING ENVIRONMENTAL REVIEW COMMENTS:

PROJECT TITLE: Diablo Grande Water Plan Supplemental EIR
APPLICATION NO. N/A
PROJECT DESCRIPTION: Attached

Based on this agencies particular field(s) of expertise, it is our position the above described project:

XXX Will not have a significant effect on the environment.
___ May have a significant effect on the environment.
___ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) - (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts:

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

Response prepared by:

Jay R. Begun — Partner — March 18, 1997
Name — Title — Date

C:\OFFICE\WPWIN\WPDOCS\DIABLO\DG0167-E.MEM

PETE WILSON
GOVERNOR

State of California

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET
SACRAMENTO 95814

LEE GRISSOM
DIRECTOR

DATE: March 12, 1997

TO: Reviewing Agencies

RE: DIABLO GRANDE SPECIFIC PLAN; WATER RESOURCES PLAN
SCH# 97032022

Attached for your comment is the Notice of Preparation for the DIABLO GRANDE SPECIFIC PLAN; WATER RESOURCES PLAN draft Environmental Impact Report (EIR).

Responsible agencies must transmit their concerns and comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

KIRK FORD
STANISLAUS COUNTY
100 H STREET
MODESTO, CA 95354

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Kristen Derscheid at (916) 445-0613.

Sincerely,

Antero A. Rivasplata

ANTERO A. RIVASPLATA
Chief, State Clearinghouse

Attachments

cc: Lead Agency

D = sent by lead agency
X = sent by SCH

Resources Agency

- [X] Nadell Gayou, *Resources Agency*, 1020 Ninth Street, Third Floor, Sacramento, CA 95814, 916/327-1722 Fax 916/327-1648
- [ ] Nicole Lefria, *Dept. of Boating & Waterways*, 1629 S Street, Sacramento, CA 95814, 916/445-6281 916/327-7250
- [ ] Elizabeth A. Fuchs, *California Coastal Commission*, 45 Fremont Street, Suite 1970, San Francisco, CA 94105-2219, 415/904-5200 Fax 415/904-5400
- [ ] Reed Holderman, *State Coastal Conservancy*, 1330 Broadway, Suite 800, Oakland, CA 94612, 510/286-1015 Fax 510/286-0470
- [X] Keren Yowell, *Dept. of Conservation*, 801 K Street, MS-24-02, Sacramento, CA 95814, 916/445-8733 Fax 916/324-0948
- [ ] Dale Wierman, *Dept. of Forestry*, 1416 Ninth Street, Room 1516-2, Sacramento, CA 95814, 916/653-9451 Fax 916/653-0989
- [X] Hans Kreutzberg, *Office of Historic Preservation*, P.O. Box 942896, Sacramento, CA 94296-0001, 916/653-9107 Fax 916/653-9824
- [ ] Environmental Review, *Dept. of Parks and Recreation*, P.O. Box 942896, Sacramento, CA 94296-0001, 916/653-0538
- [ ] Environmental Review, *Reclamation Board*, 1416 Ninth Street, Room 1623, Sacramento, CA 95814, 916/327-1531 Fax 916/327-1600
- [ ] Steve McAdam, *S.F. Bay Conservation & Dev't. Comm.*, 30 Van Ness Avenue, Room 2011, San Francisco, CA 94102, 415/557-3686 Fax 415/557-3767
- [X] Nadell Gayou, *Department of Water Resources*, 1020 Ninth Street, Third Floor, Sacramento, CA 95814, 916/327-1722 Fax 916/327-1648

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- [ ] Kim Dirk, *Dept. of Health*, 601 N. 7th Street, PO Box 942732, Sacramento, CA 94234-7320, 916/323-6111 Fax 916/327-6092

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- [ ] Brian Hunter, Regional Manager, Department of Fish and Game, P.O. Box 47, Yountville, CA 94599, 707/944-5518 Fax 707/944-5563
- [X] George Nokes, Regional Manager, Department of Fish and Game, 1234 East Shaw Avenue, Fresno, CA 93710, 209/445-6132 Fax 209/445-6607
- [ ] Department of Fish and Game, *Environmental Services*, 330 Golden Shore, Suite 50, Long Beach, CA 90802, 310/590-5132 Fax 310/590-5192

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- [ ] California Energy Commission, 1516 Ninth Street, MS-15, Sacramento, CA 95814, 916/654-3944
- [X] Native American Heritage Comm., 915 Capitol Mall, Room 364, Sacramento, CA 95814, 916/653-4082 Fax 916/657-5390
- [ ] Martha Sullivan, *Public Utilities Commission*, 505 Van Ness Avenue, San Francisco, CA 94102, 415/703-2011 Fax 415/703-1965
- [X] Betty Silva, *State Lands Commission*, 100 Howe Avenue, Suite 100-S, Sacramento, CA 95826, 916/574-1872 Fax 916/574-1885
- [ ] Gerald R. Zimmerman, *Colorado River Board*, 770 Fairmont Avenue, Suite 100, Glendale, CA 91203-1035, 818/543-4676 Fax 818/543-543-4685
- [ ] Tahoe Regional Planning, *Environmental Review*, P.O. Box 1038, Zephyr Cove, NV 89448, 702/588-4547 Fax 702/588-4527
- [ ] Thomas Ottaman, *Office of Emergency Services*, P.O. Box 29998, San Francisco, CA 94129, 415/466-9300
- [ ] Debby Eddy, *Delta Protection Commission*, P.O. Box 530, Walnut Grove, CA 95690, 916/776-2290 FAX 776-2293

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- [ ] Jeff Pulverman, *Caltrans, District 3*, 703 B Street, Marysville, CA 95901, 916/377-3859 Fax 916/323-7669
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- [X] Dana Cowell, *Caltrans, District 10*, P.O. Box 2048, Stockton, CA 95201, 209/948-7906 Fax 209/948-7906
- [ ] Lou Salazar, *Caltrans, District 11*, P.O. Box 85406, MS 5-5, 2829 Juan Street, San Diego, CA 92186-5406, 619/688-6002 Fax 619/688-2511
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- [ ] Alice Huffaker, *California Highway Patrol*, Office of Special Projects, Planning and Analysis Division, 2555 1st Ave, Sacramento, CA 95818, 916/657-7222 Fax 916/452-3151
- [ ] Ron Helgeson, *Caltrans - Planning*, P.O. Box 942874, Sacramento, CA 94274-0001, 916/653-9966 Fax 916/653-0001

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California Environmental Protection Agency

- [ ] Mike Tollstrup, *Air Resources Board*, 20201 Street, Sacramento, CA 95815, 916/322-8267 Fax 916/322-3982
- [ ] Mark deBie, *Calif. Waste Management Board*, 8800 Cal Center Drive, Sacramento, CA 95826, 916/255-4164 Fax 916/255-4071
- [ ] Wayne Hubbard, *State Water Resources Control Board, Division of Clean Water Programs*, P.O. Box 944212, Sacramento, CA 94244-2120, 916/227-4408 Fax 916/227-4549
- [ ] Phil Zanzer, *State Water Resources Control Board, Division of Water Quality*, P.O. Box 944213, Sacramento, CA 94244-2130, 916/657-0912 Fax 916/657-2388
- [X] Mike Falkenstein, *State Water Resources Control Board, Division of Water Rights*, 901 P Street, 3rd Floor, Sacramento, CA 95814, 916/657-1377 Fax 916/657-1485
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Regional Water Quality Control Board

- [ ] NORTH COAST REGION (1), 5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403, 707/576-2220 Fax 707/523-0135
- [ ] SAN FRANCISCO BAY REGION (2), 2101 Webster, Suite 500, Oakland, CA 94612, 510/286-1255 Fax 510/286-1380
- [ ] CENTRAL COAST REGION (3), 81 Higuera Street, Suite 200, San Luis Obispo, CA 93401-5427, 805/549-3147 Fax 805/543-0397
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- [X] CENTRAL VALLEY REGION (5), 3443 Routier Road, Suite A, Sacramento, CA 95827-3098, 916/255-3000 Fax 916/255-3015
  - ○ Fresno Branch Office, 3614 East Ashlan Avenue, Fresno, CA 93726, 209/445-5116 Fax 209/445-5910
  - ○ Redding Branch Office, 415 Knollcrest Drive, Redding, CA 96002, 916/224-4845 Fax 916/224-4857
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- [ ] OTHER: _____
- [ ] OTHER: _____

SCH 2/4/97

MID Modesto Irrigation District
Water and Power

1231 Eleventh St.
P.O. Box 4060
Modesto, CA 95352
(209) 526-7373

March 20, 1997

Stanislaus County
Planning Department
1100 H Street
Modesto, CA 95354

Regarding: Supplemental Environmental Impact Report - Diablo Grande Water Plan; Approximately 8 Miles West of Patterson (Diablo Grande Planned Resort Community)

ELECTRICAL:

(X) The proposed project is outside the Modesto Irrigation District's electric service area. This project does not impact the District's distribution facilities or the District's transmission facilities. Therefore the Electrical Division has no requirements on this project at this time.

IRRIGATION:

(X) In response to this plan, the District may want to indicate that any use of groundwater within the District must be consistent with the District's Groundwater Management Plan and is subject to the review and approval of all local entities and landowners impacted by this approach.

DOMESTIC WATER:

(X) No comments at this time.

3/20/97
Date

Sterling Fountain
Risk and Property Analyst

Appendix C

Summary Report,
Hydrogeologic Evaluation
Northern Portion of Diablo
Grande

SUMMARY REPORT
HYDROGEOLOGIC EVALUATION
NORTHERN PORTION OF DIABLO GRANDE
STANISLAUS COUNTY, CALIFORNIA

For:

Diablo Grande Limited Partnership

January, 1997

GEOCONSULTANTS, INC.
Hydrogeology • Ground-Water Exploration & Development •
Ground-Water Resources Management •
1450 Koll Circle, Suite 114
San Jose, California 95112
Phone: (408) 453-2541 Fax: (408) 453-2543

Project G1064-01E
January 31, 1997

Mr. Keith Schneider
Diablo Grande Limited Partnership
801 10th Street, Fifth Floor, Suite 1
Modesto, CA 95354

RE: SUMMARY REPORT
HYDROGEOLOGIC EVALUATION
NORTHERN PORTION OF DIABLO GRANDE
STANISLAUS COUNTY, CALIFORNIA

Dear Mr. Schneider:

In accordance with your authorization, we have compiled a summary report on the hydrogeologic environment at the subject site. The purpose of the study was to provide pertinent information on the ground-water conditions for inclusion in an overall development document to serve Diablo Grande.

It has been a pleasure working with you on this project. If you have any questions, please contact us at your convenience.

Sincerely,

GEOCONSULTANTS, INC.

John K. Hofer
Certified Engineering Geologist, E.G.-1065

Jeremy C. Wire
Certified Hydrogeologist, H.G.-93

Copies: Addressee (5)

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SUMMARY REPORT
HYDROGEOLOGIC EVALUATION
NORTHERN PORTION OF DIABLO GRANDE
STANISLAUS COUNTY, CALIFORNIA

INTRODUCTION

The Diablo Grande Limited Partnership is proposing to develop the first phase of a 33,000-acre property known as Diablo Grande. This Phase 1 area comprises roughly 8,500 acres in the northern portion of the property. It is located in the western portion of Stanislaus County, roughly 10 miles west of the town of Patterson. The general location is shown on the Regional Map, Figure 1.

This hydrogeologic evaluation addresses the ground-water resources of the area, and specifically discusses the feasibility of utilizing a series of water wells for domestic and irrigation supply. Several interim reports were prepared during the course of our evaluation, and are referenced herein.

Numerous test holes and wells had been constructed in the northern portion of Diablo Grande prior to the completion of this study. The following Table A presents the known information about the completed wells.

TABLE A
HISTORIC GROUND-WATER DEVELOPMENT
NORTHERN PORTION - DIABLO GRANDE

WELL NAME	COMPLETION DATE	CASING DIA. (INCHES)	CASING TYPE	DRILL DEPTH (FEET)	CASING DEPTH (FEET)	PUMP SETTING (FEET)	GEOLOGIC MATERIAL SCREENED
Barn	N/A	8	N/A	200.0	N/A	180.0	N/A
Buckeye	N/A	6	Steel	600.0	N/A	260.0	N/A
Frog Pond	N/A	6	Steel	28.5	28.5	23.0	Alluvium
14th Tee	N/A	7	Steel	320.0	N/A	280.0	N/A
Hennings	8/16/95	8	PVC	750.0	690	640.0	Sandstone/ Shale/Clay
Layne Western	N/A	N/A	Steel	N/A	N/A	N/A	N/A

TABLE A, CON'T.
HISTORIC GROUND-WATER DEVELOPMENT
NORTHERN PORTION - DIABLO GRANDE

WELL NAME	COMPLETION DATE	CASING DIA. (INCHES)	CASING TYPE	DRILL DEPTH (FEET)	CASING DEPTH (FEET)	PUMP SETTING (FEET)	GEOLOGIC MATERIAL SCREENED
Murder's Gulch	N/A	6	Steel	440.0	N/A	260.0	N/A
Power Line	N/A	8	Steel	670.0	N/A	507.0	N/A
Squirrel	N/A	32	Culvert	57.5	N/A	50.0	Alluvium
Windy	N/A	8	Steel	550.0	N/A	500.0	N/A
YF-1	7/12/95	4	PVC	1000.0	600.0	No Pump	Shale
YF-2	9/23/95	4	PVC	1200.0	600.0	No Pump	Sandstone
YF-6	10/9/95	8	PVC	700.0	700.0	N/A	Shale

The locations of these wells are shown on the Site Geology Map, Figure 2.

HYDROGEOLOGIC SETTING

Topography

Diablo Grande is located in the east foothills of the Diablo Range, west of the community of Patterson, California. Topography within the study area varies from roughly 800 feet, where Salado Creek exits the property in the northeast corner, to a high of 2,678 feet on Copper Mountain along the western property boundary. The primary drainage of Salado Creek flows from the southwest to the northeast across the study area.

Geology

Extensive mapping of the region including all or parts of Diablo Grande has been performed by Maddock (1964), Bishop (1970), Dibblee (1981, 1982a, b, and c), and Bartow, et al. (1985). These sources, as well as our on-site field mapping program have been used to compile the Site Geology Map, Figure 2.

Stratigraphy

The site is underlain primarily by bedrock materials which trend roughly north-south and dip at moderate angles to the east. The materials generally fall into three major categories: volcanic flow rocks belonging to the Franciscan Formation, a sequence of sedimentary deposits belonging to the Panoche Formation, and unconsolidated alluvium. Figure 3 shows a representative stratigraphic columnar section for the northern portion of Diablo Grande. This section represents an idealized lithologic log, with the youngest materials at the top. The following paragraphs describe in more detail each of the units presented on the stratigraphic section. In accordance with generally accepted practices, the oldest units are discussed first.

Franciscan Formation (Jdp)

Fractured volcanic rocks consisting primarily of quartz keratophyre, a lava rich in silica, outcrops along the western boundary of the property. According to Maddock (1964), the rock contains phenocrysts of albite and quartz in a matrix of chlorite, albite, quartz, and magnetite. Where observed in the study area, the material is dark brownish-gray, highly weathered, and exhibits abundant vesicles. Ground water has been known to be stored and transmitted within the fractures.

Panoche Formation

The vast majority of the study area is underlain by sedimentary deposits belonging to the Panoche Formation which is considered to be part of the Great Valley Sequence of Cretaceous age. These materials have been further divided, based on their lithology.

The basal unit has been called the Adobe Flat member (Kpaf) by

Maddock (1964). The unit occurs in the study area as a relatively thin band of dark gray to black, hard, brittle silty shale. The contact with the underlying Franciscan Formation is thought to be a fault. Because of the fine-grained nature of this unit, ground-water production is likely to be minimal, unless a series of continuous fractures can be located.

Lying unconformably above the Adobe Flat member is a claystone/siltstone (Kps) that outcrops over much of the study area. Generally, the materials are brownish-gray, fine to medium-grained, and thin bedded. Throughout this unit, interbeds of gray, fine to medium-grained arkosic sandstone occur frequently (Dibblee, 1982a). Generally, ground water is found within the thicker sandstone interbeds or along fractures.

A discontinuous band of gray-brown sandstone and conglomerate (Kpc) is found in the central portion of the study area. These materials are highly cemented and well-indurated. Although the unit is coarser-grained, the overall permeability appears low due to the cementation. Therefore, it is unlikely that significant quantities of ground water can be produced in this area.

Interbedded, fine-grained, gray sandstone and siltstone (Kp) outcrop predominantly over the eastern portion of the study area. Because of the fine-grained nature of the materials, minimal quantities of ground water are all that can be expected.

Alluvium (Qal)

The only significant deposits of alluvial materials are found within the watercourse of Salado Creek. Based on exploratory borings drilled previously, the unit consists primarily of unconsolidated gravels, sands, and silts (Geoconsultants, Inc., 1995b). Although significant amounts of ground

water can be produced from the alluvium, the maximum thickness is generally less than 50 feet.

Structure

The sedimentary materials at Diablo Grande have been folded into a eastward dipping homocline which strikes roughly north-south at the site. Dips generally range from 30 to 50 degrees.

A splinter of the Tesla-Ortigalita Fault Zone separates the older Franciscan materials on the west and the younger Panoche Formation on the east. Generally, in the site vicinity, the feature is classified as a normal fault, with the down-thrown side dipping steeply to the east. Minor faulting and stress fractures commonly occur throughout the Panoche Formation, creating conduits and/or barriers to ground-water movement, and compartments for ground-water storage. A review of existing aerial photography suggested the presence of numerous lineations, which we believed to be related to intense fracturing (WAC Corp., 1993). On-site field mapping confirmed the existence of many of these. These features appear to be related to tectonic uplift from the west.

Ground-Water Occurrence

Ground-water beneath Diablo Grande occurs within the bedrock materials and in the shallow alluvium. The bedrock where weathered exhibits both primary (intergranular) and secondary (fracture) porosity, whereas the unweathered bedrock is generally limited to secondary porosity. At Diablo Grande, ground water is produced principally from both weathered and unweathered sandstone bedrock. The alluvial materials underlying Salado Creek and its minor tributaries produce ground water from unconsolidated sands and gravels. Although limited in saturated thickness, relatively large quantities can be developed.

The depth to ground water within the bedrock materials ranges from 10 to 225 feet based on available drilling information. In the alluvium, the depth varies generally from 10 to 15 feet.

HYDROLOGY

General

Although ground water is stored in the unconsolidated alluvial deposits and fractures within the bedrock materials, the ultimate availability is determined by the amount of rainfall and stream flow recharge on a long-term basis. Recharge to wells at Diablo Grande occurs from two principal sources: direct percolation of rainfall and runoff from the surrounding hills. Ground-water extraction in an amount over the natural and artificial replenishment of the subsurface reservoir will result in mining and overdraft. Because of limited data, a normal hydrologic balance would be misleading. Therefore, as one approach to assessing the available supply, we have evaluated rainfall and runoff data in order to estimate available recharge to both the alluvial and bedrock aquifers at the site. Additionally, a significant amount of return flow from the one existing golf course enters the alluvium as recharge. This figure has also been included as part of the overall recharge. The watershed supplying the wells at Diablo Grande is shown on the Watershed Map, Figure 4.

Alluvial Aquifer

Rainfall Recharge

The area of alluvium which would be recharged by direct penetration of rainfall is about 300 acres. Rantz (1971) indicates that the average annual rainfall is 12 inches. Rantz (1974) further estimates that 0.3 inches of rainfall over the Oak Flat area becomes runoff, with the remaining quantity either percolating into the ground or being lost to evapotranspiration (ET). Therefore, the non-runoff

component of rainfall at the site is 11.7 inches. We estimate that about 80 percent of this total or 9.36 inches is lost to ET and near-surface retained moisture, with the remaining 20 percent or 2.34 inches becoming deep percolation. Thus, 2.34 inches of rainfall or about 58 acre feet (300 acres X 0.195 feet) is available as direct recharge to the alluvium on a long-term basis.

Runoff Recharge

By planimeter, the watershed area (excluding Oak Flat alluvium) contributing to the surface runoff of Salado Creek is 8,900 acres (Figure 4). There is no gauge on Salado Creek, but again using the estimates of Rantz (1971) the total annual rainfall in the watershed as defined would be 8,900 acre feet (8,900 acres X 1.0 foot) over the long-term. Rantz (1974) shows that in the watershed adjacent to Oak Flat the runoff component is 0.5 inches, with the remaining quantity (11.5 inches) either percolating into the watershed slopes outside of the alluvial area or being lost to ET. The runoff component then amounts to 356 acre feet (8,900 acres X 0.04 feet). Of this total we estimate that 20 percent or about 71 acre feet would be available as recharge to the alluvium of Oak Flat during the winter months on a long-term average. The rest of the runoff would flow through Oak Flat and continue downstream toward the San Joaquin Valley.

Return Irrigation Flow

The existing 18-hole golf course located in Oak Flat receives its irrigation water supply from an off-site well roughly six miles southeast of the site. The golf course uses roughly 540 acre-feet of water during the six-month primary irrigation season of May through October. Roughly 20 percent of this figure (108 acre-feet) is available as recharge to the alluvial aquifer on an annualized basis.

Storage Capacity

The surface area of the alluvium amounts to roughly 300 acres Based on our surface and subsurface exploration, the average saturated thickness of the alluvial aquifer is conservatively estimated to be about 10 feet. Considering the hydrogeologic properties of the materials and the results of the pumping tests, the specific yield is probably on the order of 10 percent. Thus, the storage capacity of the alluvial materials is estimated to be about 300 acre feet (300 acres X 10 feet X 0.10). This figure indicates a rough approximation of the absolute limit of ground water available if no recharge were to occur.

Bedrock Aquifer

As mentioned earlier, the approximate size of the study area is 8,500 acres. By eliminating the alluvial aquifer previously discussed, the bedrock aquifer encompasses the remaining 8,200 acres. By again using the estimates of Rantz (1971) the total annual rainfall on the bedrock aquifer is 8,200 acre feet (8,200 acres X 1.0 foot) over the long-term. Rantz (1974) shows that the runoff component is 0.5 inches, with the remaining quantity (11.5 inches) either percolating into fractures within the bedrock or being lost to ET. The non-runoff component then amounts to 7,872 acre feet (8,200 acres X 0.96 feet). Of this total we estimate that 20 percent or about 1,574 acre feet would be available as recharge to the bedrock aquifer on a long-term average.

GROUND-WATER RECHARGE

The total annual average recharge to the alluvial aquifer from the three principal components amounts to 237 acre-feet. The total for the bedrock aquifer is roughly 1,574 acre-feet per year, from rainfall percolation alone. Although some amount of runoff recharge may occur from the off-site portions of the Salado Creek

watershed, it is considered minimal, and is therefore not included in this estimate. The total ground-water recharge to the northern portion of Diablo Grande is 1,811 acre-feet per year on a long-term basis. It is important to note that extended periods of either heavy rainfall or drought may significantly alter these annual averages.

GROUND-WATER AVAILABILITY

The total recharge to the study area is roughly 1,811 acre-feet per year. In order to avoid aquifer overdraft, estimates have been made as to the maximum amount of ground water that can be safely extracted from each of the aquifer systems at the site.

Alluvial Aquifer

A prudent estimate of the ground-water availability within the alluvial aquifer is either two-thirds of the annual average natural recharge from rainfall and runoff, or one-third of the total storage capacity, whichever is less. In this case, the annual available ground water from natural recharge should not exceed 86 acre-feet. For the purposes of this analysis, the recharge component from the off-site golf course supply is not decreased by two-thirds because it is considered to be constant, and has no negative impact on the alluvial aquifer. Therefore, the total available ground water amounts to 194 acre-feet per year, or roughly 120 gpm.

Bedrock Aquifer

Because of the minimal number of wells within the bedrock aquifer, an estimate of storage capacity has not been attempted. In this case, the annual available ground water should not exceed two-thirds of the annual recharge, or 1,207 acre-feet (748 gpm).

GROUND-WATER EXPLORATION

An extensive ground-water exploration program was undertaken over eight designated sections within the northern portion of Diablo Grande. The Vertical Electrical Sounding Map, Figure 5, presents the general area of exploration and the existing features. The main purpose of this study was to evaluate the feasibility of developing a series of water wells for both domestic and irrigation purposes. This section provides a summary of these activities.

Geologic Reconnaissance

In order to develop as much preliminary information as possible regarding the geologic conditions at the site, a reconnaissance mapping program was performed. This information was to provide a basis for the location of geophysical surveys and exploratory drilling sites.

Initially, a series of black and white aerial photographs were evaluated for the presence of geologic features believed to control the occurrence and movement of ground water. Major features, such as continuous lineations and faults, were further checked in the field. The Site Geologic Map, Figure 2, presents the locations of the major features.

Geophysical Survey

In order to explore different subsurface environments throughout the site, 47 vertical electrical soundings were performed. These soundings provide a three-dimensional picture of the ground-water relationships at the site. The approximate locations are shown on the Vertical Electrical Sounding Map, Figure 5.

A vertical electrical sounding (VES) using the Schlumberger array may be visualized as an electrical "drill hole" with the depth of exploration roughly

equivalent to half of the total surface electrode spacing. Presented in Appendix A, Figures A-1 through A-47, are computer-generated graphical representations of the subsurface geoelectrical layers encountered. The VES models on the figures do not necessarily indicate the total depth of penetration because the last layer may continue below our deepest data point. The following Table B presents a summary of the sounding information.

TABLE B
VERTICAL ELECTRICAL SOUNDING DATA
NORTHERN PORTION - DIABLO GRANDE

Sounding Number	Modeled Depth Interval (feet)	Average Electrical Resistivity (ohm-meters)	Lithologic Material	Total Depth Explored (feet)
VES-1	0 - 56	27	Alluvium	
	56 - 105	38	Sandstone	
	105 - 168	10	Claystone	
	> 168	62	Water-Bearing Sandstone	800
VES-2	0 - 24	16	Weathered Sandstone	
	24 - 75	34	Sandstone	
	75 - 155	11	Claystone/Siltstone	
	> 155	28	Sandstone	900
VES-3	0 - 32	58	Weathered Conglomerate	
	32 - 109	256	Conglomerate	
	109 - 252	19	Siltstone	
	> 252	598	Conglomerate	700
VES-4	0 - 38	21	Alluvium	
	38 - 160	26	Water-Bearing Sandstone	
	> 160	16	Siltstone	700
VES-5	0 - 13	53	Alluvium	
	> 13	28	Sandstone	250
VES-6	0 - 43	36	Alluvium	
	> 43	20	Siltstone	200
VES-7	0 - 38	38	Alluvium	
	38 - 50	25	Sandstone	
	> 50	17	Siltstone	100
VES-8	0 - 31	45	Alluvium	
	> 31	20	Siltstone	160
VES-9	0 - 40	51	Alluvium	
	> 40	18	Siltstone	250
VES-10	0 - 15	26	Alluvium	
	15 - 137	30	Sandstone	
	> 137	4	Claystone	160

TABLE B, CON'T.
VERTICAL ELECTRICAL SOUNDING DATA
NORTHERN PORTION - DIABLO GRANDE

Sounding Number	Modeled Depth Interval (feet)	Average Electrical Resistivity (ohm-meters)	Lithologic Material	Total Depth Explored (feet)
VES-11	0 - 13	56	Alluvium	
	> 13	27	Sandstone	160
VES-12	0 - 21	24	Weathered Sandstone	
	21 - 497	29	Sandstone	
	> 497	8	Claystone	1,000
VES-13	0 - 274	25	Sandstone	
	274 - 472	9	Claystone	
	> 472	43	Sandstone	1,000
VES-14	0 - 18	33	Weathered Sandstone	
	18 - 163	21	Siltstone	
	163 - 337	30	Sandstone	
	337 - 568	13	Siltstone	
	> 568	38	Sandstone	1,000
VES-15	0 - 209	33	Sandstone	
	209 - 294	19	Siltstone	
	> 294	32	Sandstone	1,000
VES-16	0 - 90	33	Dry Sandstone	
	90 - 122	13	Siltstone	
	122 - 261	59	Water-Bearing Sandstone	
	261 - 549	12	Siltstone	
	> 549	93	Hard Sandstone	1,000
VES-17	> 0	24	Dry Sandstone	1,000
VES-18	0 - 116	26	Dry Sandstone	
	116 - 200	53	Water-Bearing Sandstone	
	200 - 379	6	Claystone	
	> 379	105	Hard Sandstone	900
VES-19	0 - 119	113	Dry Sandstone	
	119 - 160	36	Sandstone	
	> 160	71	Water-Bearing Sandstone	600
VES-20	0 - 319	24	Dry Sandstone	
	319 - 849	59	Water-Bearing Sandstone	
	> 849	485	Hard Sandstone	1,000
VES-21	0 - 89	44	Dry Sandstone	
	89 - 485	23	Water-Bearing Sandstone	
	> 485	105	Hard Sandstone	1,000
VES-22	0 - 80	54	Dry Sandstone	
	80 - 209	16	Siltstone	
	209 - 568	56	Water-Bearing Sandstone	
	> 568	21	Siltstone/Sandstone	1,000
VES-23	0 - 63	39	Dry Sandstone	
	63 - 117	8	Claystone	
	> 117	35	Sandstone	1,000
VES-24	0 - 117	50	Weathered Volcanics	
	> 117	205	Fractured Volcanics	500

TABLE B, CON'T.
VERTICAL ELECTRICAL SOUNDING DATA
NORTHERN PORTION - DIABLO GRANDE

Sounding Number	Modeled Depth Interval (feet)	Average Electrical Resistivity (ohm-meters)	Lithologic Material	Total Depth Explored (feet)
VES-25	0 - 143	130	Dry Shale	
	143 - 219	10	Siltstone	
	> 219	91	Hard Shale	600
VES-26	0 - 34	111	Dry Sandstone	
	34 - 90	21	Sandstone	
	> 90	67	Water-Bearing Sandstone	600
VES-27	0 - 106	39	Dry Sandstone	
	106 - 486	55	Water-Bearing Sandstone	
	> 486	40	Sandstone	900
VES-28	0 - 45	26	Weathered Sandstone	
	45 - 84	60	Dry Sandstone	
	84 - 140	10	Claystone	
	> 140	69	Water-Bearing Sandstone	900
VES-29	0 - 201	25	Dry Sandstone/Siltstone	
	201 - 532	48	Water-Bearing Sandstone	
	> 532	4	Claystone	800
VES-30	0 - 232	36	Weathered Volcanics	
	> 232	442	Fractured Volcanics	400
VES-31	0 - 43	47	Dry Sandstone	
	43 - 266	184	Water-Bearing Sandstone	
	266 - 689	25	Sandstone	
	> 689	101	Hard Sandstone	800
VES-32	0 - 88	31	Dry Sandstone	
	88 - 177	54	Sandstone	
	177 - 373	7	Claystone	
	> 373	59	Hard Sandstone	800
VES-33	0 - 100	52	Weathered Volcanics	
	100 - 141	27	Weathered/Fractured Volcanics	
	> 141	721	Fractured Volcanics	700
VES-34	0 - 74	79	Dry Shale	
	74 - 134	12	Claystone	
	134 - 358	220	Hard, Dry Shale	
	> 358	9	Claystone	1,000
VES-35	0 - 31	23	Weathered Sandstone	
	31 - 281	79	Water-Bearing Sandstone	
	281 - 390	49	Sandstone	
	> 390	154	Hard Sandstone	700
VES-36	0 - 67	52	Dry Sandstone	
	67 - 151	233	Conglomerate	
	151 - 479	23	Sandstone/Siltstone	
	> 479	356	Conglomerate	1,000

TABLE B, CON'T.
VERTICAL ELECTRICAL SOUNDING DATA
NORTHERN PORTION - DIABLO GRANDE

Sounding Number	Modeled Depth Interval (feet)	Average Electrical Resistivity (ohm-meters)	Lithologic Material	Total Depth Explored (feet)
VES-37	0 - 40 40 - 270 > 270	38 17 99	Dry Sandstone Siltstone Water-Bearing Sandstone	500
VES-38	0 - 47 47 - 90 > 90	92 14 70	Dry Sandstone Siltstone Water-Bearing Sandstone	600
VES-39	0 - 136 > 136	46 88	Dry Sandstone Water-Bearing Sandstone	600
VES-40	0 - 70 70 - 176 > 176	28 184 2	Dry Sandstone Water-Bearing Sandstone Claystone	800
VES-41	0 - 104 104 - 248 > 248	28 18 33	Dry Sandstone Siltstone Sandstone	600
VES-42	0 - 57 57 - 99 99 - 143 > 143	22 36 8 62	Sandstone/Siltstone Dry Sandstone Claystone Sandstone	600
VES-43	0 - 34 34 - 72 > 72	22 30 20	Alluvium Sandstone Siltstone	600
VES-44	0 - 97 97 - 256 > 256	34 14 46	Dry Sandstone Siltstone Water-Bearing Sandstone	800
VES-45	0 - 76 76 - 123 > 123	39 227 6	Dry Sandstone Conglomerate Claystone	500
VES-46	0 - 36 36 - 87 > 87	697 98 1,444	Hard Volcanics Fractured Volcanics Hard Volcanics	400
VES-47	0 - 78 78 - 246 > 246	25 14 21	Dry Sandstone Siltstone Sandstone/Siltstone	600

Several of the soundings were performed near existing wells so as to correlate the geoelectrical information with the previously observed subsurface conditions. VES-1 was performed near the Power Line Well, VES-4 near the Frog Pond Well, VES-5 near the Squirrel Well, and VES-21 near the Hennings Bros. Well and the YF-6 Well. This information enabled us to determine the character of

a sounding at a location where measurable ground-water production had been confirmed during pumping tests. In addition, VES-3 was performed near the Layne Western Well, VES-12 near the Buckeye Well, VES-29 near the Barn Well, and VES-32 near the Murderer's Gulch Well, so as to define the character of a sounding where ground-water production was minimal.

Although there are several exceptions, ground water generally occurs in sandstone or fractured volcanics where the electrical resistivity exceeds 50 ohm-meters. Furthermore, where the thickness of the water-bearing sandstone or volcanics are greater, higher quantities of ground water are more likely to be produced. Therefore, only those soundings in sandstone with over 350 feet of potential water-bearing production zones, and volcanics with over 150 feet of potential, were considered worthy of further evaluation by test drilling. These most promising sites were prioritized, and recommendations for further exploration by exploratory drilling were developed.

Exploratory Drilling

To date, 15 exploration sites have been drilled within the northern portion of Diablo Grande as part of this study. Of these, five have been completed as water wells. Two of the completed wells were constructed to act as observation wells during aquifer tests at the Frog Pond and Squirrel Wells, and one was completed as a replacement well for the Frog Pond Well. The following Table C presents a drilling and construction summary for the exploration conducted during this study. The locations of each of the wells is presented on the Well Location Map, Figure 6. Detailed lithologic logs and well construction diagrams are presented in Appendix B.

Since July 14, 1995, 15 sites have been explored by drilling. Six exploratory borings within the alluvium of Salado Creek were drilled with continuous flight

augers. The two observation wells were constructed using hollow-stem augers, and the Frog Pond Replacement Well was constructed by bucket auger methods. The remaining locations were drilled with air-rotary methods. The six exploratory borings, the two observation wells, and the Frog Pond Replacement Well were drilled within the alluvial deposits of Salado Creek, and ranged in depth from 20 to 50 feet. The six bedrock sites ranged in depth from 500 to 800 feet. Samples of the drill cuttings at each of the sites were collected and evaluated by our staff for soil and/or rock type and water-bearing potential.

Electrical logs, consisting of resistivity and spontaneous potential, were performed in the bedrock drill holes to determine the water-bearing potential. These logs were used to accurately identify ground-water production zones and, in the event of well completion, subsequent well screen location.

Following completion of the exploratory drilling, the ground-water production potential was assessed, and as long as there appeared to be production in excess of ten gallons per minute, a water well was designed. Well casing in the bedrock wells was either five or eight-inch diameter, PVC or steel, and ranged in depth from 380 to 481 feet. The three alluvial wells ranged in depth from 20 to 45 feet. The observation wells were constructed with two-inch diameter PVC casing, while the Frog Pond Replacement Well was designed utilizing an eight-inch PVC casing inside a 12-inch steel outer casing.

TABLE C
WELL CONSTRUCTION INFORMATION
NORTHERN PORTION - DIABLO GRANDE

Well No.	Completion Date	Diameter (inches)	Casing Type	Drill Depth (feet)	Case Depth (feet)	Geologic Unit Screened
OW-1 (Frog Pond)	8/8/95	2	PVC	45	45	Alluvium
OW-2 (Squirrel)	8/8/95	2	PVC	25	20	Alluvium
Frog Pond Replacement	8/1/96	12 (outer) 8 (inner)	Steel (outer) PVC (inner)	35	35	Alluvium

TABLE C, CON'T.
WELL CONSTRUCTION INFORMATION
NORTHERN PORTION - DIABLO GRANDE

Well No.	Completion Date	Diameter (inches)	Casing Type	Drill Depth (feet)	Case Depth (feet)	Geologic Unit Screened
YF-8	7/15/96	5	PVC	500	380	Kps
YF-12	8/21/96	8	Steel	505	491	Kps

AQUIFER TESTING

General

Aquifer testing, consisting of 24-hour sustained yield tests, was performed on seven existing wells and three of the wells drilled as part of this study. The purpose of the sustained yield tests was to determine such aquifer properties as specific capacity, transmissivity, storativity, and "safe yield". Discharge rates were determined by noting the amount of time necessary to fill a 5 or 32-gallon bucket, and converting to a gallon per minute (gpm) flow rate. In those wells where a flow meter was installed, the total number of gallons pumped was divided by the total pumping time to determine the flow rate. The water levels were measured with an electrical sounding device. Where well spacing was relatively close, as in the case of YF-6 and the Hennings Well; or where observation wells were present, as in the case of the Frog Pond, Frog Pond Replacement, and Squirrel wells; water levels were measured in both during each of their sustained yield tests.

Aquifer Characteristics

Aquifer characteristics were evaluated using the test data, and such properties as the coefficient of transmissivity, specific capacity, and storativity were determined. In the event of the close proximity of another production well or an observation well, values were calculated directly from the drawdown and recovery curves of the non-pumping well. Otherwise estimated values were prepared from

the pumping well data. Table D summarizes the characteristics encountered at each of the wells tested. Drawdown and recovery curves for each of the aquifer tests performed are included in Appendix C.

Coefficient of Transmissivity

The coefficient of transmissivity (T) indicates the capacity of the aquifer system as a whole to transmit water. If a nearby well is available, transmissivity can be calculated from the drawdown and/or recovery curves of the non-pumping well by means of the following formula:

$$T = \frac{264Q}{\Delta s};$$

where **Q** is the pumping rate (gpm), and **Δs** is the change in drawdown in feet per log cycle in the straight line portion of the curve. In those cases where an observation well is not available, the transmissivity can be estimated by either applying the previous formula to the drawdown and recovery curves of the pumping well, or by multiplying the specific capacity of the well by 2,000.

$$\mathbf{T \approx (2{,}000)\ (Specific\ Capacity)}$$

Based on the data obtained, transmissivities ranged from 1,400 to 28,000 gpd/ft in the alluvial wells, and 10 to 321 gpd/ft in the bedrock wells.

Specific Capacity

The specific capacity of a well is a measure of the productivity, and is generally obtained by dividing the discharge by the total drawdown:

$$\text{Specific Capacity} = \frac{\text{Pumping Rate (gpm)}}{\text{Drawdown (feet)}} = \frac{Q}{s};$$

where **Q** is the discharge (gpm) and **s** is the total drawdown (feet). In certain instances, such as in the case of the original Frog Pond aquifer test, the specific capacity must be estimated by utilizing the following formula:

$$\text{Specific Capacity} \approx \frac{T}{2,000};$$

where **T** is the transmissivity (gpd/ft) and **2,000** is a constant. Specific capacities range from 0.70 to 14.0 gpm/ft in the alluvial wells, and 0.03 to 0.83 gpm/ft in the bedrock wells.

Storativity (S) is defined as the volume of water that an aquifer releases from, or takes into storage per unit of surface area of aquifer per unit change in head (Todd, 1980). Storativity (dimensionless) can be calculated from the drawdown curve of an observation well during the pumping of a production well by means of the following formula:

$$S = \frac{0.3Tt_0}{r^2};$$

where **T** is the transmissivity (gpd/ft), t_0 is the intercept of the straight-line portion of the recovery curve at zero drawdown (days), and **r** is the distance from the pumping well to the monitoring well (feet). In those cases where an observation well is not present, a storativity value is estimated based on wells penetrating similar lithologies. Based on available information, bedrock storitivities average 3×10^{-5}, while alluvial values range from 1×10^{-4} to 0.1.

TABLE D
AQUIFER CHARACTERISTICS
NORTHERN PORTION - DIABLO GRANDE

Well No.	Transmissivity (gpd/ft)	Specific Capacity (gpm/ft)	Storativity (dimensionless)
Alluvial Aquifers:			
Frog Pond	28,000	14.00	0.122
Frog Pond Replacement	26,400	5.20	0.0077
Squirrel	1,400	0.70	0.0001
Bedrock Aquifers:			
14th Tee	49	0.09	0.00003
Hennings	188	0.09	0.00003
Power Line	204	0.43	0.00003
Windy	10	0.03	0.00003
YF-6	171	0.46	0.00003
YF-8	56	0.08	0.00003
YF-12	321	0.83	0.00003

Well Yield

Based on information derived from 24-hour aquifer tests, estimates were prepared as to the maximum yield over both a 24-hour and a long-term period. Because of the marked differences in production capabilities between the alluvial wells and the bedrock wells, two different methodologies were utilized to calculate yields. A summary of the governing factors and the rationale used are summarized in Table E.

Alluvial Wells

As discussed earlier, several of the production wells within the northern portion of Diablo Grande derive their supply totally from the alluvium of Salado Creek. Initially aquifer tests were performed on the Frog Pond and Squirrel Wells. Later, following concerns from County Health personnel, the Frog Pond Well was abandoned and the Frog Pond Replacement Well was tested.

For the purposes of yield calculations, the alluvial aquifer of Salado Creek is

assumed to be uniform in character and thickness. By utilizing the Cooper and Jacob modification of the Theis nonequilibrium well equation (Driscoll, 1986), it is possible to estimate a sustained pumping rate assuming the maximum available drawdown. The maximum available drawdown extends from the static water level to the pump intake, and the average for the three alluvial wells tested was 24 feet. The modified Theis equation is as follows:

$$s = \frac{264Q}{T} \log \frac{0.3Tt}{r^2 S}$$

where s is equal to the maximum available drawdown in feet, Q is equal to the discharge in gpm, T is equal to the transmissivity in gpd/ft, t is equal to the time in days, r is equal to the radius of the casing in feet, and S is equal to the storativity which is dimensionless. By rewriting the equation to solve for Q, the projected maximum pumping rate after a specific number of days can be estimated as follows:

$$Q = \frac{(T)(s)}{(264)\log \frac{(0.3)(T)(t)}{(r^2)(S)}}$$

Additionally, we further assume that the well will only exhibit a 60 percent efficiency, thereby decreasing the maximum yield to a "safe" yield.

Bedrock Wells

Unlike alluvial deposits, bedrock aquifers are not uniform and therefore a different criteria must be used to determine individual well yields. For purposes of this analysis, well yields are determined from the 24-hour specific capacity and the available drawdown in the well. Using typical methodology, the available

drawdowns used for yield calculations were either 2/3 of the maximum available drawdown in a partially screened well, or 1/3 of the total saturated thickness penetrated by a fully screened well (Driscoll, 1986; U.S. Department of Interior, 1981). In those cases where the maximum available drawdown was less than 1/3 of the saturated thickness, the available drawdown was taken to be equal to the maximum available. In no cases was the available drawdown allowed to exceed 1/2 of the total saturated thickness. The average available drawdown for the seven bedrock wells tested was 162 feet.

TABLE E
AVAILABLE DRAWDOWN
NORTHERN PORTION - DIABLO GRANDE

Well No.	Static Water Level (feet)	Saturated Thickness (feet)	Available Draw-down (feet)	Available Drawdown Rationale
Alluvial Aquifers:				
Frog Pond	7.70	20.80	15.30	Cooper/Jacob Modified Equation
Frog Pond Replacement	10.33	24.67	20.67	Cooper/Jacob Modified Equation
Squirrel	12.60	44.90	37.40	Cooper/Jacob Modified Equation
Bedrock Aquifers:				
14th Tee	19.65	300.35	100.12	Fully Screened-1/3 Saturated Thickness
Hennings	82.55	607.45	202.48	Fully Screened-1/3 Saturated Thickness
Power Line	5.45	664.55	221.52	Fully Screened-1/3 Saturated Thickness
Windy	15.00	535.00	178.33	Fully Screened-1/3 Saturated Thickness
YF-6	63.40	636.60	318.30	Partially Screened-2/3 Maximum Available Drawdown (Limited to 1/2 Saturated Thickness)
YF-8	11.20	368.80	122.93	Fully Screened-1/3 Saturated Thickness
YF-12	6.00	485.00	66.67	Partially Screened-2/3 Maximum Available Drawdown (Limited to section above discharge barrier)

"Safe" Yield

The term "safe" or perennial yield simply means the amount of water that can be produced without causing adverse effects (Todd, 1980). "Safe" yields were

calculated for both the alluvial and bedrock wells using the above methodologies. It is important to note in the case of the Frog Pond Replacement Well, that the long-term "safe" yield is limited by the annual recharge to the alluvial aquifer. Additionally, since a discharge barrier was encountered during the pumping of YF-12 at a depth of roughly 106 feet, the maximum available drawdown was decreased to 100 feet so as to limit the stress on the aquifer. In the bedrock wells, long-term "safe" yields assume a pumping period of 24 hours followed by a recovery period of equal length, in order to avoid excess extraction from storage.

Table F summarizes the totals for the wells tested. Since the original Frog Pond Well was abandoned following the construction of the replacement well, the calculated "safe" yield is not included in the table.

TABLE F
WELL YIELD ESTIMATES
NORTHERN PORTION - DIABLO GRANDE

Well No.	24-Hour "Safe" Yield (gpm)	Long-Term "Safe" Yield (gpm)	Long-Term "Safe" Yield (acft/yr)
Alluvial Aquifers:			
Frog Pond Replacement	188	107 *	173
Squirrel	19	13	21
Bedrock Aquifers:			
14th Tee	9	4	6
Hennings	18	9	15
Power Line	95	47	76
Windy	5	2	3
YF-6	146	73	118
YF-8	10	5	8
YF-12 **	55	27	44
TOTALS:	**545**	**287**	**464**

NOTES * Long-term "safe" yield limited by 120 gpm of recharge to alluvial basin on an annualized basis.

** Available drawdown limited to 100 feet due to a discharge barrier encountered at 106 feet in depth.

CONCLUSIONS

Based on the results of this hydrogeologic evaluation, the following basic conclusions have been developed:

1. two principal aquifer systems, consisting of alluvium and bedrock materials, exist in the northern portion of Diablo Grande;
2. a total of 1,401 acre-feet of ground water is available for usage at the site on an annualized basis, of which 194 acre-feet comes from the alluvial aquifer, and 1,207 acre-feet comes from the bedrock aquifer;
3. the two wells within the alluvial aquifer, although capable of producing more, are limited to a long-term "safe" yield of 194 acre-feet per year, or roughly 120 gpm; and
4 the seven wells penetrating the bedrock aquifer are capable of a "safe" yield of 270 acre-feet per year (167 gpm), which amounts to only 14 percent of the available supply.

LIMITATIONS

Geoconsultants, Inc. provides its findings, recommendations, specifications, and professional advice after preparing such information in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the field of hydrogeology. This acknowledgment is in lieu of all warranties either express or implied.

No guarantee is made that water will continue to be found in any specific quantity or mineral quality at any well location stated. Environmental changes, either naturally occurring or artificially induced, may cause the quality and/or quantity of water produced to change with time. Therefore, we do not guarantee continued production or consistent mineral quality of ground water from any well in the future.

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ILLUSTRATIONS

REGIONAL MAP

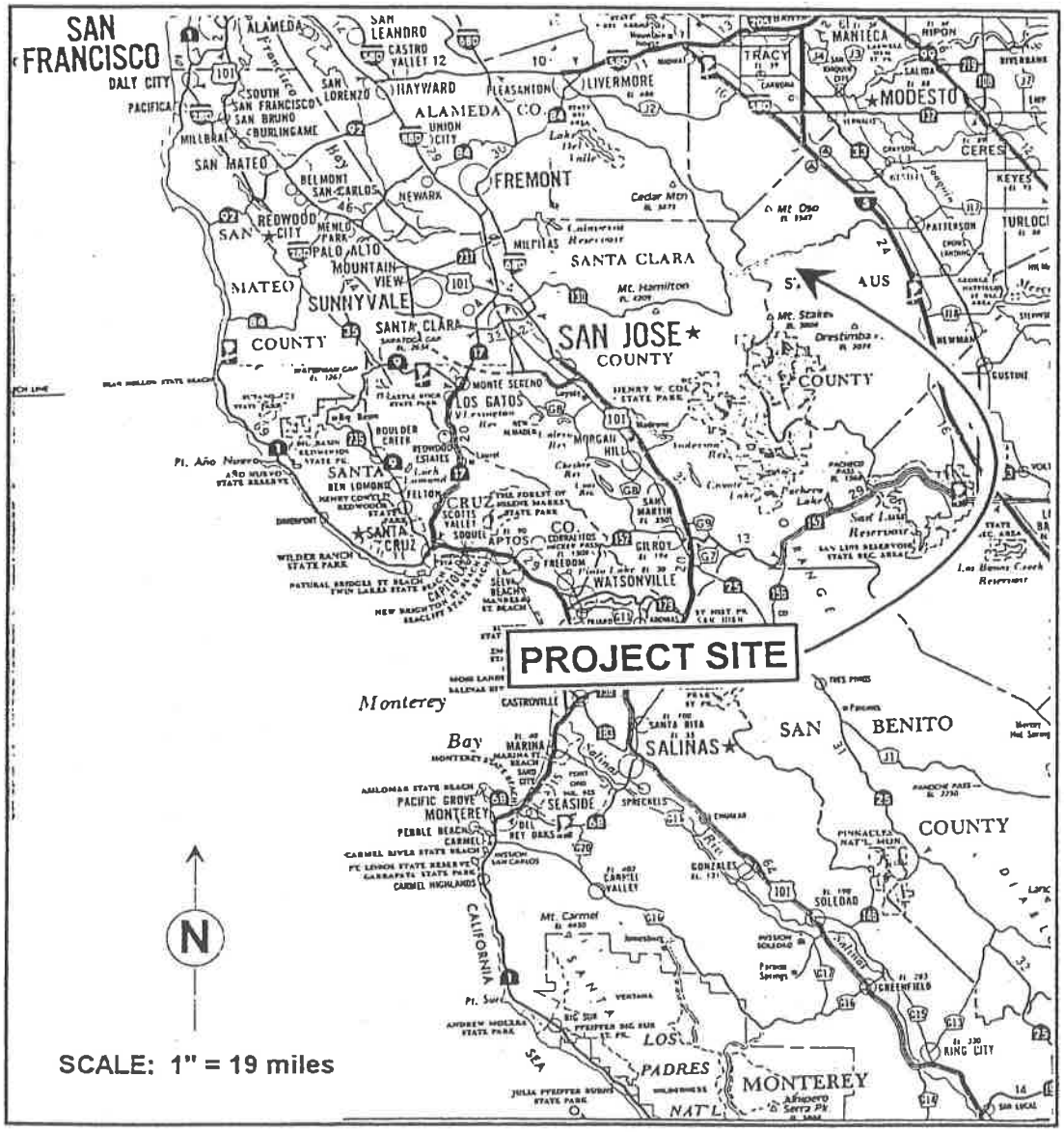

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FIGURE 1

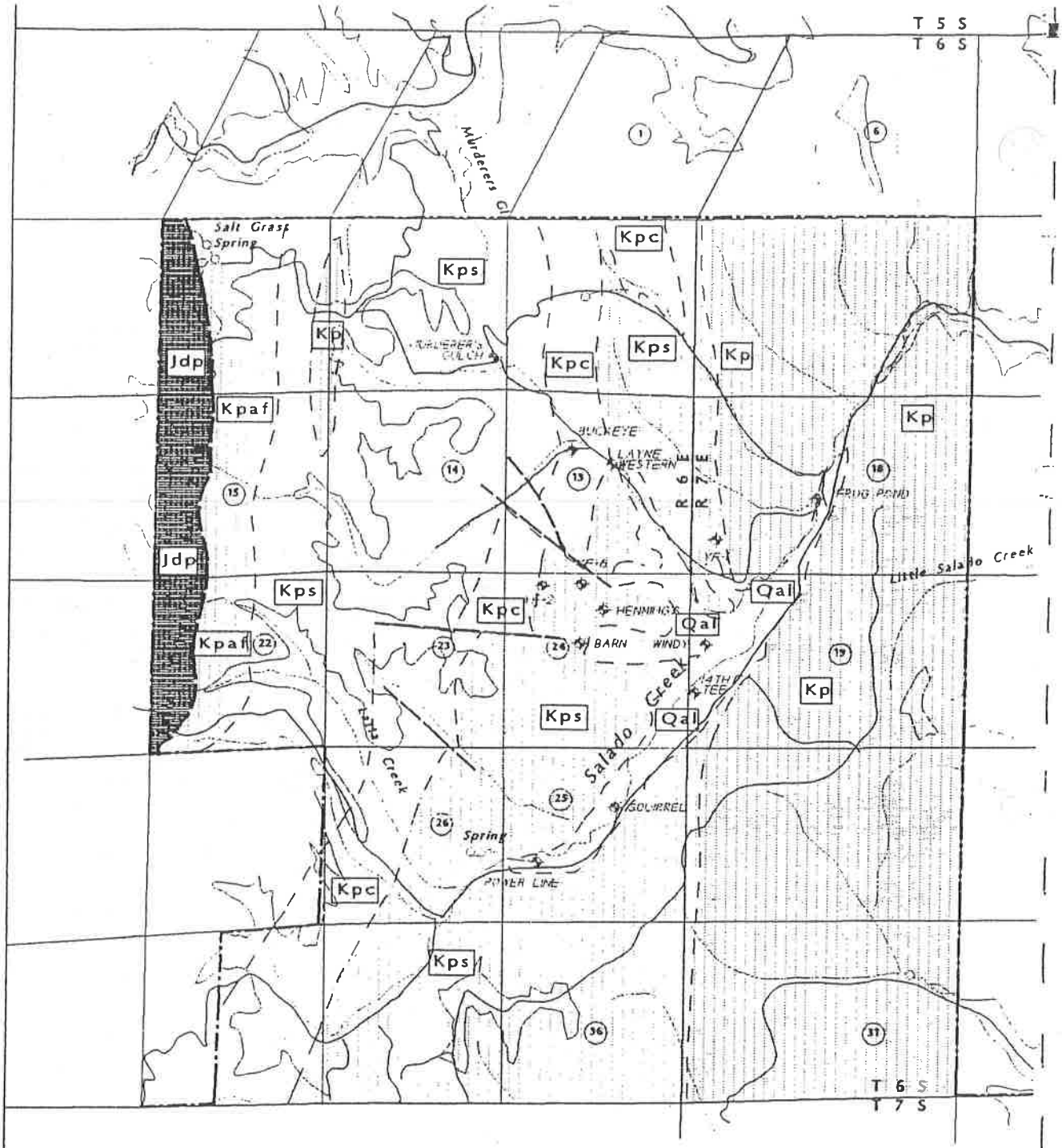

FIGURE 2

Site Geology Map
Northern Portion - Diablo Grande
Stanislaus County, California
1/97

SOURCE: USGS Topographic Quadrangles

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REPRESENTATIVE STRATIGRAPHIC COLUMNAR SECTION
NORTHERN PORTION - DIABLO GRANDE

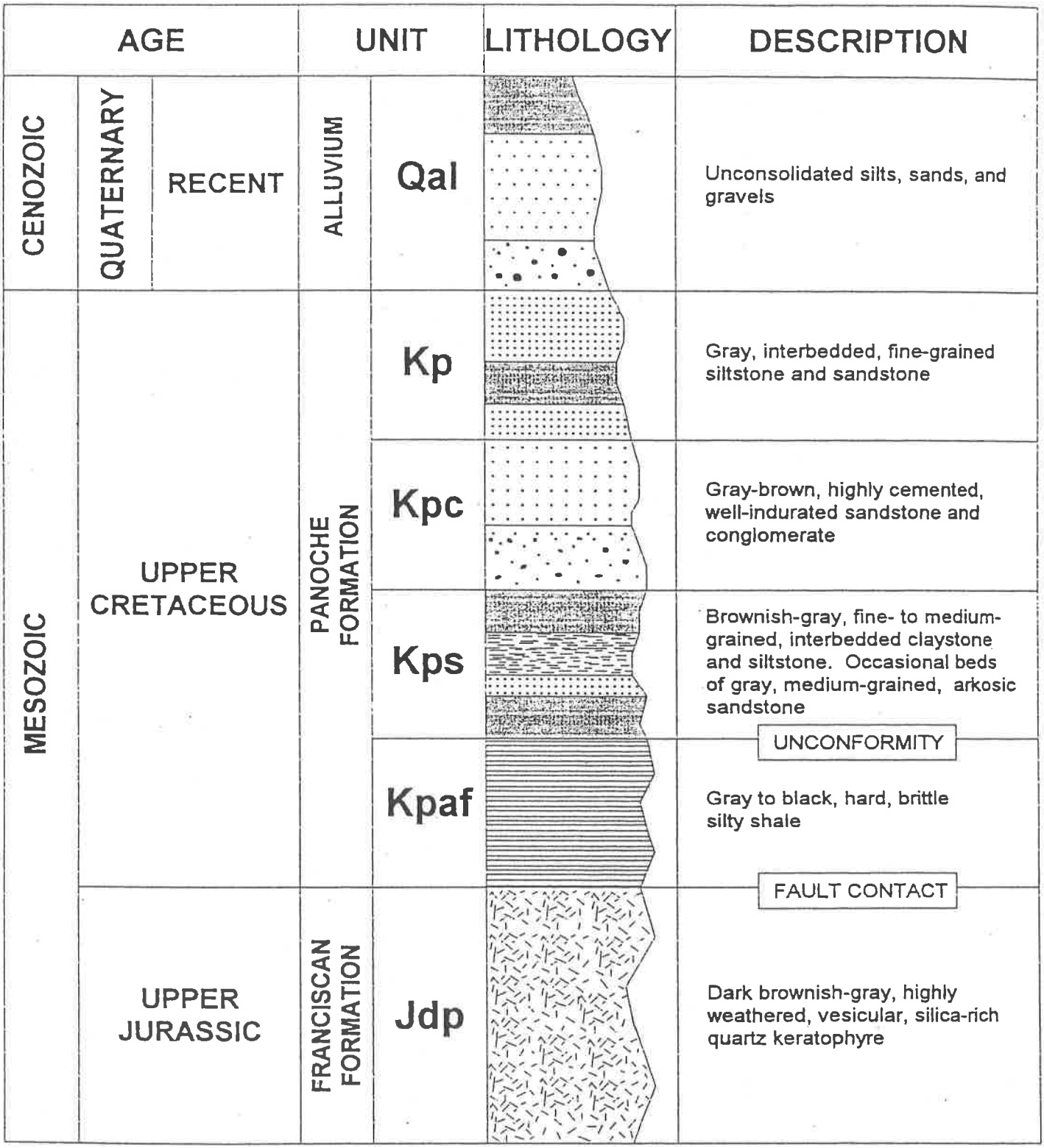

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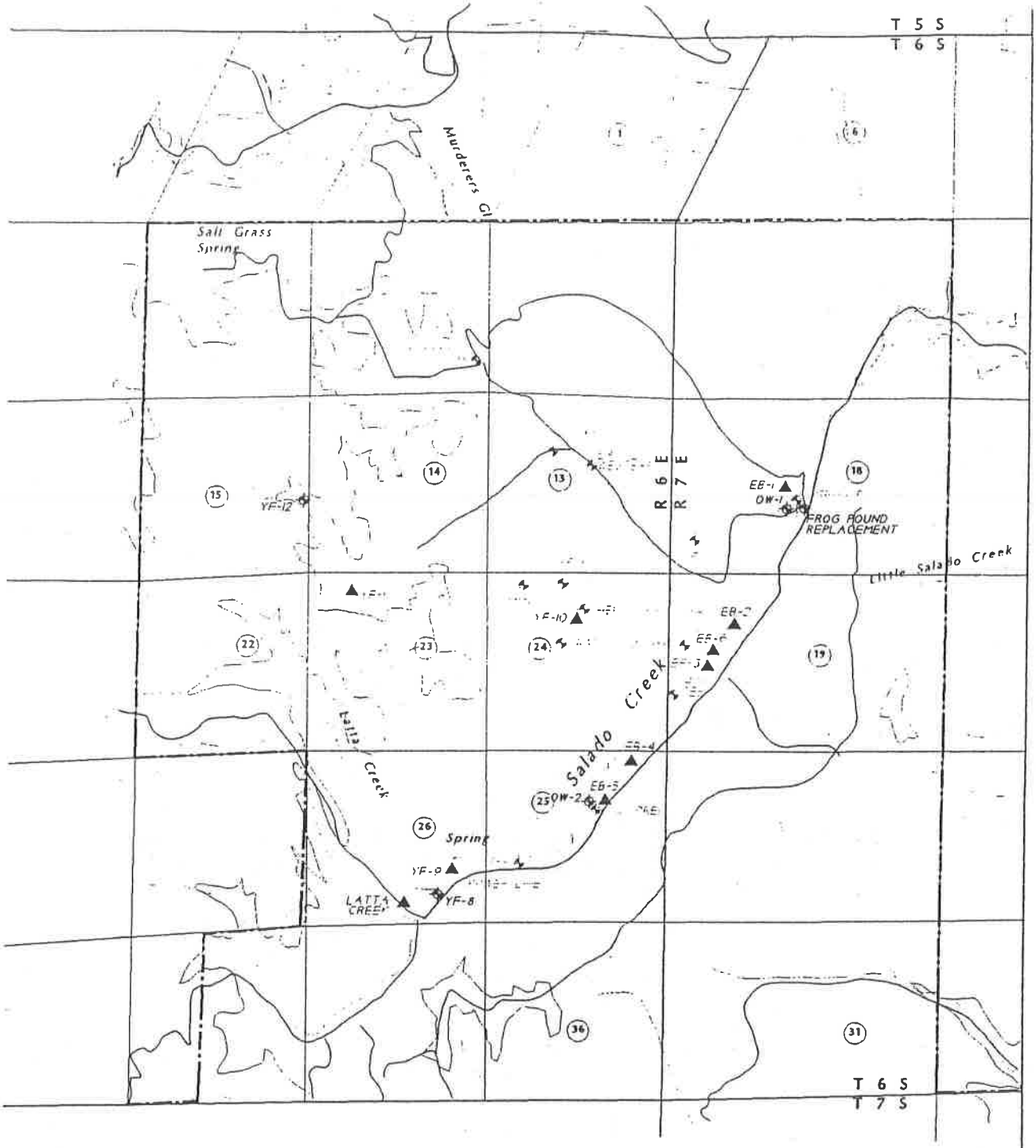
FIGURE 3



EXPLANATION

- EXPLORATORY BORING LOCATION
- NEW WELL LOCATION
- EXISTING WELL LOCATION
- APPROXIMATE PARCEL BOUNDARY LINE
- CREEK
- TOPOGRAPHIC CONTOUR LINE
- SPRING
- ACCESS ROAD
- (36) SECTION NUMBER

FIGURE 6

Well Location Map
Northern Portion - Diablo Grande
Stanislaus County, California

1/97

SOURCE: USGS Topographic Quadrangles

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Project G1064-01F
June 6, 1997

Mr. Joseph M. Karnes
EMC Planning Group, Inc.
P.O. Box 414
Monterey, CA 93942

**RE: ADDENDUM TO HYDROGEOLOGIC EVALUATION
NORTHERN PORTION OF DIABLO GRANDE
STANISLAUS COUNTY, CALIFORNIA**

Reference: Summary Report
Hydrogeologic Evaluation
Northern Portion of Diablo Grande
Stanislaus County, California

Dated: January 31, 1997

Dear Mr. Karnes:

In accordance with your request, the following presents additional comments on the potential recharge to the alluvial aquifer of Salado Creek as described in the above referenced report. We understand that a second golf course, located in the upper reaches of the Salado Creek alluvial deposit has been constructed since the issuance of our summary report in January of this year. The irrigation supply for this second course also is currently, or will be soon, primarily obtained from the offsite well supplying the existing course. Therefore, increases to the return irrigation flow component of the alluvial aquifer recharge need to be addressed. For convenience, the adjustments to specific sections of our summary report are referenced by paragraph heading and page number.

Return Irrigation Flow - Page 7

It was estimated that the existing golf course uses roughly 540 acre-feet of water during a six-month primary irrigation season. We have assumed a similar demand for the new course, increasing the total irrigation demand for the two courses to 1,080 acre-feet annually. 1,000 acre-feet of this demand will be supplied by the off-site well. 20 percent of the irrigation supply, or 216 acre-feet, is available as recharge to the alluvial aquifer on an annualized basis.

Ground-Water Recharge - Pages 8 and 9

The total average annual recharge to the alluvial aquifer has been increased to 345 acre-feet. The rainfall and runoff recharge components have remained at 58 and 71 acre-feet, respectively. The return irrigation flow component has been increased from 108 to 216 acre-feet, with the development of the second course. The total ground-water recharge to the northern portion of Diablo Grande is 1,919 acre-feet per year on a long-term basis.

Ground-Water Availability - Page 9

The total recharge to the study area has been increased from 1,811 to 1,919 acre-feet per year.

Alluvial Aquifer - Page 9

The annual available ground water from natural recharge remains at 86 acre-feet. The recharge component from the off-site golf course supply is 200 acre-feet (20 percent of 1,000 acre-feet). The projected recharge from the remaining golf course irrigation return to be obtained from on-site wells will be 16 acre-feet. To be conservative, we have decreased this number by two-thirds (11 acre-feet) to allow for potential on-site aquifer impacts. Therefore, the total available ground water amounts to 297 acre-feet per year, or roughly 184 gallons per minute (gpm).

"Safe" Yield - Page 23

The total long-term "safe" yields of the two alluvial aquifer wells, the Frog Pond Replacement Well and the Squirrel Well, were originally limited to the total annual recharge of 120 gpm. Even though the available ground water has been increased to 184 gpm, it has been decided to continue to limit the usage of the alluvial wells to 120 gpm, in order to augment water levels in Salado Creek and the Frog Pond.

It has been a pleasure working with you on this project. If you have any questions, please contact us at your convenience.

Sincerely,

GEOCONSULTANTS, INC.

John K. Hofer
Engineering Geologist, E.G.-1065

JKH:rls

Copies: Addressee (1)
Mr. Dave Romano (1)

(G1054-01F.doc)

Appendix D

Patterson Algal Turf
Scrubber Water Reclamation
Project Expanded Initial
Study

PATTERSON ALGAL TURF SCRUBBER WATER RECLAMATION PROJECT

EXPANDED INITIAL STUDY

City of Patterson
June 1996

Patterson Algal Turf Scrubber Water Reclamation Project

Expanded Initial Study

Prepared for:

City of Patterson
P.O. Box 667
Patterson, California 95363

June 1996

Prepared by:

EMC Planning Group Inc.

99 Pacific Street, Suite 155F
Monterey, California 93940
Phone: 408.649.1799/Facsimile: 649.8399

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Appendices

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1.0 Introduction

1.1 Authorization and Purpose

Aquatic BioEnhancement Systems (ABES) is developing a wastewater reclamation program that involves additional treatment of wastewater from the City of Patterson (which is presently discharged to evaporation and percolation ponds) and discharge of this water to the San Joaquin River. The reclaimed water would then be available, through contract with the Western Hills Water District (WHWD), to be exchanged to meet a portion of the demands of the Diablo Grande development, located in western Stanislaus County.

The City of Patterson (hereinafter "city"), acting as the lead agency, has determined that an initial study is required to evaluate the potential environmental effects of the proposed project. This initial study has been prepared by EMC Planning Group Inc. (hereinafter "consultant") on behalf of the city. The applicant is ABES.

This initial study has been prepared in compliance with the California Environmental Quality Act (CEQA). CEQA Guidelines section 15063(c) states that the purposes of an initial study are to:

- Provide the lead agency the information to decide whether to prepare an environmental impact report (EIR) or a negative declaration;
- Enable the applicant to modify a proposed project by mitigating adverse impacts before an environmental impact report is prepared;
- Assist in the preparation of an EIR;
- Facilitate environmental review early in the design of a proposed project;
- Provide documentation of the factual basis for the finding in a negative declaration that a proposed project will not have a significant effect on the environment; and,
- Eliminate unnecessary EIRs.

CEQA Guidelines section 15382 states that a significant effect on the environment means a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the proposed project. If the proposed project will not result in a significant effect on the environment, then a negative declaration may be prepared. Initial studies provide documentation of the factual basis for the finding of a negative declaration. This initial study is predicated on an environmental checklist form that was completed by the consultant to determine the potential impacts of the proposed project that must be discussed in this initial study. This checklist is included in Appendix A.

1.2 Initial Study Overview

The following is a brief overview of the organization of this initial study. It is intended to inform the reader how this document was prepared and presented, and to identify the general contents within.

- **Section 1** contains an introduction to CEQA and the purposes of an initial study as well as this initial study overview.
- **Section 2** contains a description of the proposed project.
- **Section 3** contains the environmental evaluation. This section includes the environmental setting, impacts and mitigation measures. This section also incorporates, by reference, portions of existing environmental documents or other documents that are both matters of public record and generally available to the public (CEQA Guidelines §15150). In addition, documents prepared for the proposed project and referenced in this section are available at the Patterson Planning Department.
- **Section 4** contains the mandatory findings. The purpose of this section is to determine whether the proposed project will require the preparation of an EIR.
- **Section 5** contains the environmental determination, which will be made by the city. Based on the information in this initial study, the city will determine whether to prepare a negative declaration or an EIR.
- **Section 6** lists the preparers of this initial study, persons contacted and contains a bibliography of publications used in this initial study.

2.0 Project Description

The proposed project involves the treatment and discharge of effluent from the Patterson Wastewater Treatment Plant (hereinafter "treatment plant") to the San Joaquin River, the diversion of an equal amount of water from the River, and the conveyance of that water to the Diablo Grande project, located in the western foothills of Stanislaus County. To facilitate understanding, the project is broken down into three elements.

The firm Aquatic BioEnhancement Systems (ABES) and the city have entered into an agreement whereby ABES will construct an Algal Turf Scrubber (ATS) at the treatment plant to further treat the existing treatment plant effluent to a level which would allow discharge of the treated water into the adjacent San Joaquin River (the "treatment/discharge element"). WHWD will then take a like amount of water out of the River (the "diversion element") and will convey this water to Diablo Grande (the "conveyance/use element").

The diversion by WHWD would be generally made pursuant to Section 1485 of the California Water Code. This section of the code allows public agencies discharging treated wastewater into the San Joaquin River to apply for a permit to appropriate an equal amount of water (less losses between the point of discharge and point of diversion).

The applicant has prepared a Report of Waste Discharge document which presents information to support a National Pollution Discharge Elimination System (NPDES) permit which will be required for the proposed discharge. This document serves as the basis for some of the information contained in this initial study and is available for review at the Patterson City Hall.

The project site is located within the City of Patterson and Stanislaus County. Patterson is situated in the Central Valley of California, approximately 70 miles southeast of San Francisco. Figures 1 and 2 illustrate the regional location and project vicinity, respectively. The details of each element are described below. After the description of each element, descriptions of the location, existing land uses, and surrounding land uses related to each element are presented.

2.1 Treatment/Discharge Element

2.1.1 Description of Treatment/Discharge Element

Patterson Wastewater Treatment Plant. The city owns and operates the treatment plant which treats approximately 1,000 acre-feet (AF) per year of effluent through a mechanical process to a secondary level of treatment. The treated effluent is then discharged into percolation/evaporation basins which occupy approximately 51 acres of the treatment plant. The city has a National Pollutant Discharge Elimination System (NPDES) permit allowing discharge of effluent into the San Joaquin River provided specified standards are met. (California Regional Water Quality Control

Board Order No. 94-242). However, effluent has not been discharged to the River since 1983.

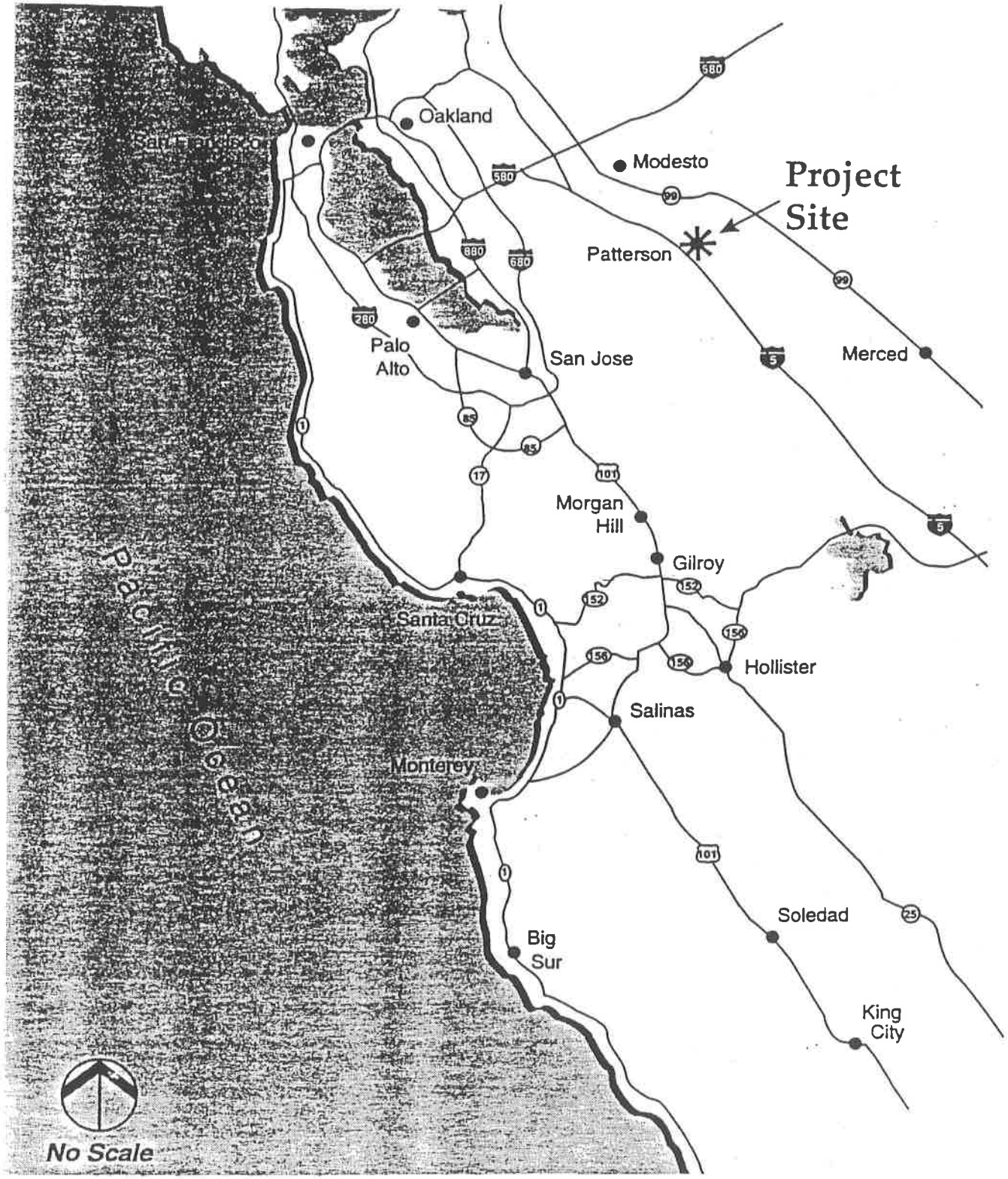
ABES has constructed a pilot ATS at the treatment plant to demonstrate compliance with NPDES standards anticipated to be included in the NPDES permit required for discharge from the ATS to the River. The pilot ATS facility consists of a concrete runway covered with a plastic liner, 500 feet long, 22 feet wide, and six inches deep, over which a shallow layer of effluent is allowed to flow. As the effluent flows over the runway, algae grows by feeding on the constituents of the effluent. As a result of this process, the water at the end of the runway is cleaned to a level which has been shown to meet likely waste discharge requirements equal to those imposed on the existing treatment plant discharge permit, with the exception of pH. Currently, approximately 200 acre-feet per year of effluent is treated, and this treated water is recycled into the existing percolation/evaporation basins.

The pilot ATS facility has been in operation since October 1993. From that time until December 1994, the effluent was continuously monitored for compliance with Title 22 water quality standards which must be met for issuance of an NPDES permit. As sufficient data had been collected by that time to support the NPDES permit application, monitoring was discontinued. However, operation of the pilot facility has continued since that time. The algae that takes in constituents of the effluent has economic value and will be sold commercially.

As part of the project, a new ATS facility will be constructed. This facility will be five times larger than the existing pilot plant. The new facility will be 500 feet long, 110 feet wide and six inches deep. The proposed location of the new ATS facility is shown on Figure 3.

Discharge Permit. As part of the proposed project ABES will apply for an NPDES Discharge Permit from the State of California Regional Water Quality Control Board (the "NPDES Permit"). Acquisition of the permit will allow the treated water from the ATS facility to be discharged into the San Joaquin River. Issuance of the permit by the RWQCB will ensure that the water discharged meets or exceeds all applicable water quality standards. Results of monitoring from the pilot ATS facility will be included in the permit application to demonstrate compliance with the applicable standards.

ABES proposes to construct the necessary pipelines and facilities from the existing treatment plant to deposit the treated effluent into the San Joaquin River somewhere between a point near the existing Las Palmas Bridge to a point just south of the existing Patterson Water District (PWD) pumping station. Figure 2 illustrates this area. The outfall could take place either at an existing return ditch from the PWD canal or through construction of a new outfall. As an alternative, the effluent may be deposited in an existing effluent drainage ditch from the treatment plant, running northeast to the River. The City holds a discharge permit for effluent discharge at this location. Use of this ditch would include any necessary ditch improvements. A Streambed Alteration Permit from the California Department of Fish and Game would be required for any new discharge.



Source: California State Automobile Association and EMC Planning Group Inc.

EMC Planning Group Inc.
A Land Use Planning and Design Firm

Patterson Algal Turf Scrubber
Water Reclamation Initial Study
Regional Location

Figure 1

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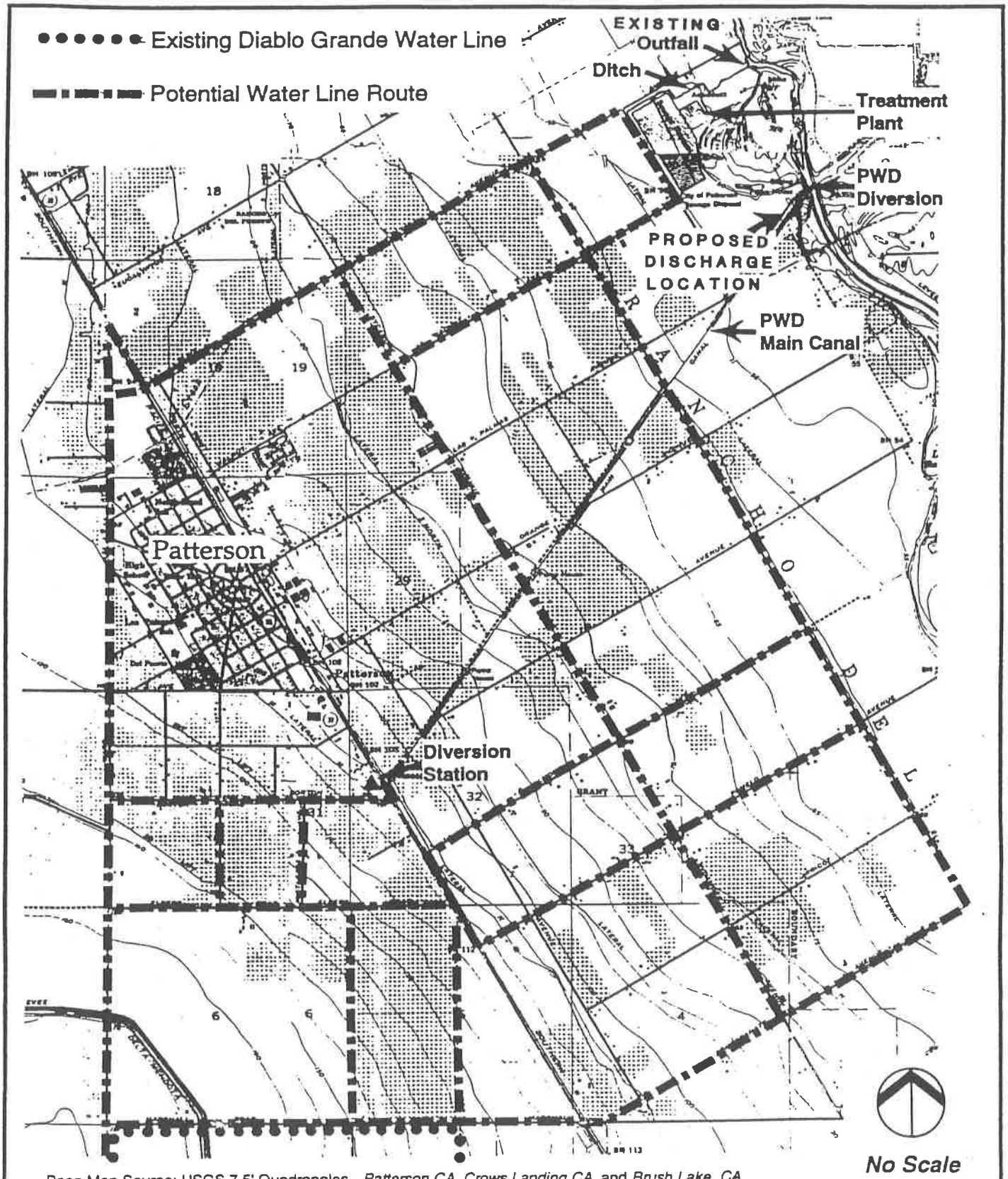

Base Map Source: USGS 7.5' Quadrangles - *Patterson CA, Crows Landing CA,* and *Brush Lake CA*

EMC Planning Group Inc.

A Land Use Planning and Design Firm

Patterson Algal Turf Scrubber
Water Reclamation Initial Study

Project Vicinity

Figure
2

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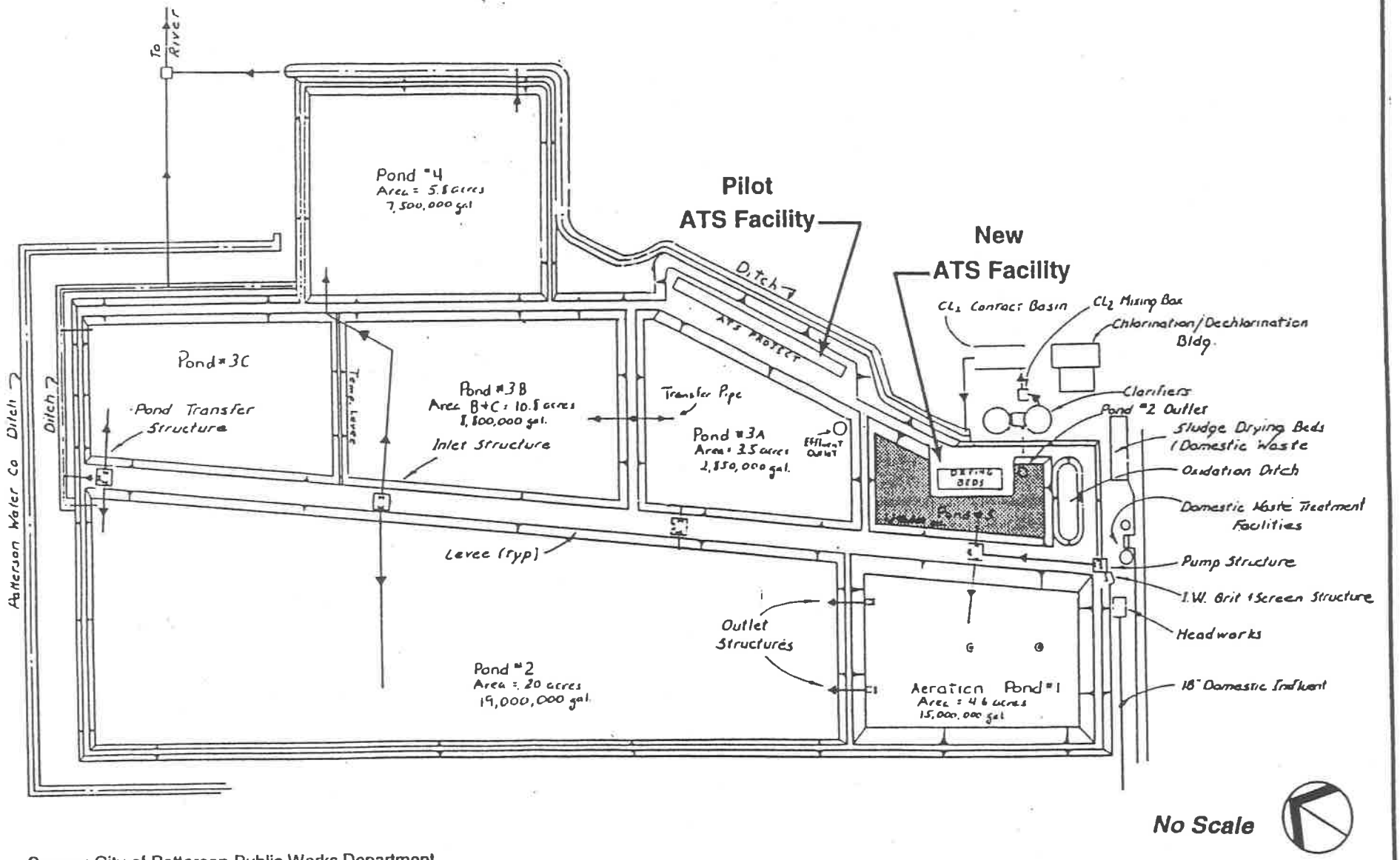

Source: City of Patterson Public Works Department

EMC Planning Group Inc.
A Land Use Planning and Design Firm

Patterson Algal Turf Scrubber
Water Reclamation Initial Study

Patterson Wastewater Treatment Plant

Figure
3

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San Joaquin River. Once the ATS facility is operational and upon issuance of the discharge permit, the treated water from the ATS facility will be discharged into the San Joaquin River. The water will be discharged on a continuous basis throughout the year. Since the effluent from the treatment plant serves as the influent for the ATS facility, the amount of water discharged to the River will depend on inflows to the treatment plant. Over recent years, inflows have averaged about 950 acre-feet per year. This total is expected to increase as the city grows.

Capacity is available in the treatment plant infiltration/evaporation ponds to temporarily store effluent prior to introduction to the ATS facility to match the rate of discharge of water to the San Joaquin River and rate of water diverted from the River to the extent required by the NPDES permit.

2.1.2 Treatment/Discharge Element Location

Patterson Wastewater Treatment Plant. The proposed project includes facilities located within the treatment plant. The treatment plant is located adjacent to the San Joaquin River floodplain approximately one-quarter mile from the main channel of the River, approximately three miles northeast of Patterson on Poplar Avenue. The treatment plant is located in the City of Patterson. The treatment plant includes a ditch which runs generally northeast from the facility which empties into the San Joaquin River approximately 3,500 feet downstream from the Patterson Bridge (on Las Palmas Avenue). The City has a discharge permit for effluent discharge using this ditch. The ditch is located in the unincorporated area of Stanislaus County.

While the existing ditch could be utilized, it is expected that the effluent will be piped from the treatment plant to the south, either across an open field, or along Poplar Avenue, and deposited either into an existing PWD water return ditch, which now discharges to the San Joaquin River, or through a pipeline and discharge structure within approximately 1,000 sq.ft. upstream of the existing PWD diversion facility. The most southerly location of the discharge point would be in the vicinity of the existing Patterson Bridge over the San Joaquin River. Figure 2 illustrates this area. A Streambed Alteration Permit from California Department of Fish and Game and/or an Army Corps of Engineers Section 404 permit could be required for any new discharge.

2.1.3 Treatment/Discharge Element Existing Land Uses

Patterson Wastewater Treatment Plant. The existing 80 acre treatment plant contains facilities related to treatment of wastewater including influent screening, comminution, extended aeration in an oxidation ditch, effluent clarification, sludge dewatering, and on-site discharge. Facilities are also available for disinfection (chlorination followed by dechlorination) and for discharge of disinfected effluent to the San Joaquin River at a point northeast of the treatment plant (see Figure 2). A ditch running northeast from the treatment plant is available to convey treated effluent to the River and is part of the treatment plant. This ditch has not been utilized, except in emergency situations, since 1983.

The new proposed discharge location would require the pipeline to be constructed across an open field neighboring the treatment plant on the south or along county rights-of-way. The pipeline would then deposit the treated effluent into an existing PWD water return ditch alongside the existing PWD canal or deposit the effluent directly into the San Joaquin River, generally in the vicinity of an existing roadway.

The treatment plant also includes a pilot Algal Turf Scrubber/Ultraviolet treatment facility ("ATS facility"). The ATS facility is described in Section 2.1. Figure 3 illustrates the location of facilities within the treatment plant.

2.1.4 Treatment/Discharge Element Surrounding Land Uses

Patterson Wastewater Treatment Plant. The San Joaquin River floodplain and main channel borders the treatment plant to the east. Immediately adjacent to the treatment plant lies a former meander of the River which appears to pond seasonally and may become connected to the main channel during period of high flow. Land uses to the north, west, and south consist of row/field crops.

The first non-riparian diversion downstream from the project site is approximately five river miles from the proposed point of discharge at the existing PWD diversion. At this location, there are three water rights applications for diversions from the San Joaquin River with total diversion rights of about 6.5 cfs. These diversions are for irrigation purposes (Report of Waste Discharge, p. 4-10). The next major non-riparian diversion is about 13 miles downstream near the confluence with the Toulumne River by the West Stanislaus Irrigation District. The state does not have complete records of riparian diversions.

2.2 Diversion Element

2.2.1 Description of Diversion Element

The project includes two possible diversion and conveyance scenarios. Under the first alternative, an existing diversion facility, owned and operated by the Patterson Water District (PWD) would be used. Under the second alternative, the WHWD would construct a new diversion structure near the existing treatment plant discharge facility. The route selected for conveying the water to the existing Diablo Grande transmission facilities will depend on the diversion alternative chosen and negotiation regarding the pipeline route.

Alternative 1

PWD Pump Station. Approximately 1,000 feet downstream from the Patterson Bridge, water would be diverted from the River in an amount equal to that discharged (1,000 AF per year). This diversion would occur at the existing diversion facility owned and operated by the PWD. The PWD has a pre-1914 right to divert

this water from the River. The applicant does not propose any modifications to the existing PWD diversion structure as part of the proposed project.

Alternative 2

New Diversion Facility. Under this alternative, the WHWD would construct a new diversion facility on the west bank of the San Joaquin River in the vicinity of the existing treatment plant discharge facility. The new diversion structure would consist of an intake pipe and a pumping facility. This facility would be located within 100 feet downstream of the existing treatment plant outfall location.

The project proponent has considered several configurations for the new diversion facility. The type selected would depend on the characteristics of the site selected for the facility and economic factors. Three alternatives are under consideration and are illustrated in Figure 4. Each alternative would include three 100-horsepower vertical turbine pumps. Two of the pumps would operate in parallel to deliver the three cfs design capacity. The third pump would be installed as a standby unit. The pumping units would be housed in a masonry, or other suitable type structure, with approximate dimensions of 20 feet by 20 feet.

The Alternative A configuration would be sited in an area where there is an extensive flood plain, such as in the vicinity of the existing treatment plant outfall. This alternative would consist of the intake works and pumping plant combined in a single reinforced concrete structure situated adjacent to the low flow channel. The vertical turbine pumps would be supported by the intake structure and pump the water from the wetwell to the conveyance pipeline. Remote control of the pumping units would be required due to the limited accessibility during occasional high flood periods.

Alternatives B and C would be suitable installations where an extensive floodplain is not present, and the river bank is adjacent to the low flow channel. The intake works and pumping plant for Alternative B would be similar to Alternative A, except that the structure would be situated at the river bank with one side open to the River. Alternative C would consist of submersible pumps installed on an incline at the River bank. The size of the structure for this alternative would be less than Alternatives A or B. The three alternatives are illustrated on Figure 4.

The WHWD could also be required to apply for a streambed alteration permit from the California Department of Fish and Game and/or and Army Corps of Engineers Section 404 permit under this alternative.

2.2.2 Diversion Element Location

The diversion element would constitute one of the following alternatives.

Alternative 1

Patterson Water District Pump Station. The PWD owns and operates a pump station on the west side of the San Joaquin River, about one-half mile southeast of

the treatment plant and about 1,000 feet north of the Patterson Bridge. The project site includes this facility.

Alternative 2

Treatment Plant Outfall. The diversion facility would be located in the vicinity of the existing treatment plant outfall. This facility is located on the west bank of the San Joaquin River, about one quarter mile northeast of the treatment plant. The project site includes the area along the bank of the River up to 100 feet downstream from the existing outfall. The project site includes area ten feet above and below the mean high water line.

2.2.3 Diversion Element Existing Land Uses

Alternative 1

PWD Pump Station. The existing PWD pump station consists of four pumps which divert water from the San Joaquin River to the PWD main canal. The pumps are housed within a wooden frame structure approximately fifty feet square which extends approximately twenty feet into the River. The pumps are capable of diverting up to 250 cubic feet per second (cfs) of water from the River.

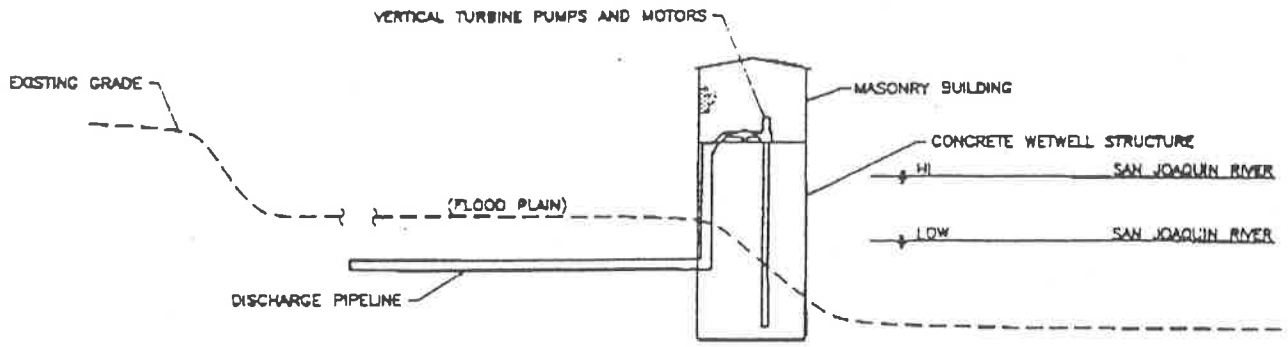
Alternative 2

Existing Treatment Plant Outfall. The new diversion structure would be located in the vicinity of the existing treatment plant outfall. The facility would consist of an intake pipeline and pumps connecting to the new water pipeline (described below in Conveyance/Use Element Alternative). The outfall consists of a culvert that is partially buried within the sandy bank and is in disrepair. The banks of the River up- and downstream from the outfall are undeveloped and support areas of riparian vegetation interspersed with open areas.

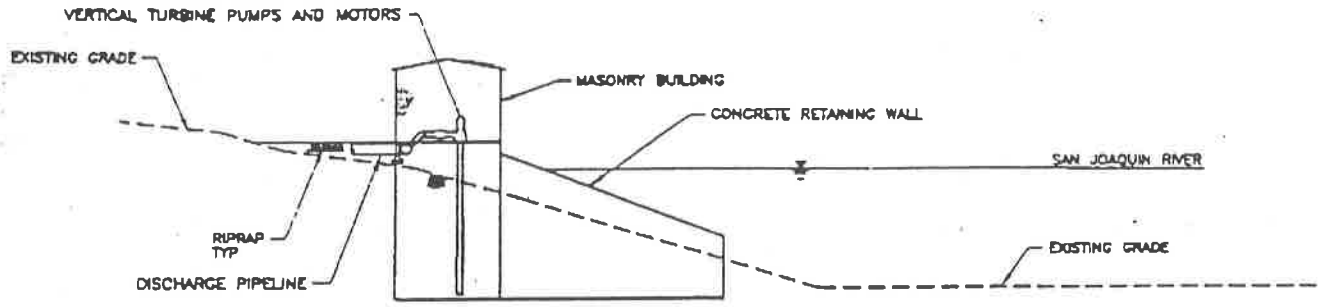
2.2.4 Diversion Element Surrounding Land Uses

Alternative 1

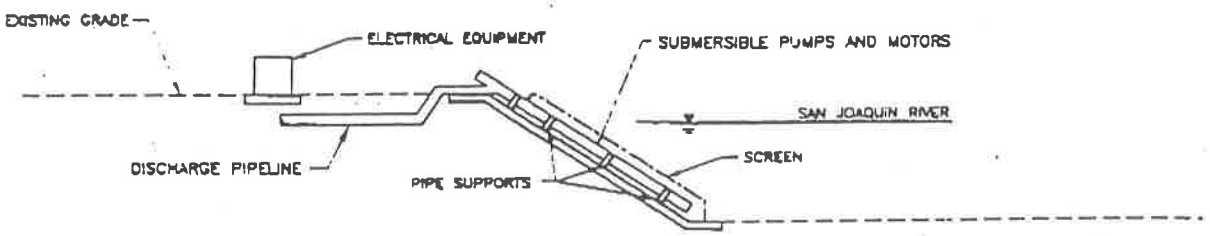
PWD Pump Station. The San Joaquin River borders the pump station to the east. To the north exists a public access point for River access which includes a parking lot and restroom. To the west and south lie row/field crops. The PWD main canal runs southwest from the pump station.



ALTERNATIVE A



ALTERNATIVE B



ALTERNATIVE C

March 1996

Source: Bookman-Edmonston Engineering, Inc.

EMC Planning Group Inc.

A Land Use Planning and Design Firm

Patterson Algal Turf Scrubber
Water Reclamation Initial Study

New Diversion Facility Alternatives

Figure 4

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Alternative 2

New Diversion Facility. The San Joaquin River borders the proposed facility to the east. The existing treatment plant outfall is located within approximately 100 feet upstream from the proposed diversion facility. To the north, west, and south of the proposed diversion facility lie pasture lands interspersed with natural vegetation. The treatment plant is located about one quarter mile to the southwest.

2.3 Conveyance/Use Element

2.3.1 Description of Conveyance/Use Element

As stated in Section 2.2, there are two conveyance options under consideration.

Alternative 1

PWD Main Canal. The water diverted from the San Joaquin River at the existing PWD diversion facility would be conveyed in the PWD main canal and associated transmission facilities to a point just west of Highway 33.

New Water Pipeline. The WHWD currently owns a water transmission facility from near the intersection of Marshall and Davis Roads to the Diablo Grande project. The WHWD would take the water from the PWD main canal at a point just east of Highway 33 (see Figure 2). This diversion will involve the construction of a small diversion station and pumping facility adjacent to an existing PWD lift station at this location. The facility will consist of a concrete enclosure about 10 feet long by 10 feet wide by 10 feet high.

The water will then be conveyed, through an underground pipeline, to a connection point along the existing 16-inch water line in Marshall Road which proceeds to the Diablo Grande project. The exact route of the pipeline has not been finally determined. Figure 2 illustrates the routes under consideration. The environmental effects of all routes under consideration are addressed in this initial study.

Alternative 2

New Water Pipeline from New Diversion Facility. Under this alternative, the conveyance facility would connect the new diversion facility to the existing WHWD water transmission facility to Diablo Grande. The conveyance facility would consist of a buried water pipeline. The exact route of the pipeline has not been finally determined. Figure 2 illustrates the routes under consideration. The environmental effects of all routes under consideration are addressed in this initial study.

The connection of the new water pipeline with the existing pipeline to the Diablo Grande project is the limit of the project site. Full environmental review has been

performed on the existing WHWD facilities and the Diablo Grande project (Diablo Grande Final EIR), and this environmental review has accounted for the possibility that the water in these facilities could come from sources other than the existing well at Marshall and Davis Roads. This EIR is on file and is available for review at the Patterson City Hall.

2.3.2 Conveyance/Use Element Location

The conveyance/use element would constitute one of the following alternatives. Under either alternative, the pipeline would be buried and would be covered with the original soil, leaving no change in topography.

Alternative 1

PWD Main Canal. The PWD Main Canal ("main canal") carries water from the pump station southwest, across State Highway 33. Lateral canals convey water from the main canal to farmlands in the vicinity. The project site includes the portion of the main canal from the pump station to a point just east of Highway 33 approximately one-half mile north of Elfers Road.

New Water Pipeline. Under this alternative, a new water pipeline would be constructed from the point on the main west of Highway 33, described above, to the Western Hills Water District (WHWD) transmission facility near the intersection of Marshall and Davis Roads or a point along the existing water line which continues to the Diablo Grande project.

The exact route of the new water pipeline has yet to be finally determined. The following routes are under consideration and are evaluated for environmental effects in this initial study.

The pipeline may be installed along roadways entirely within county rights-of-way. Routes under consideration include: Bortch Road, Elfers Road, Ward Avenue, Del Puerto Avenue, and Mistletoe Avenue. These routes are illustrated on Figure 2.

A portion of the pipeline may be installed across agricultural lands between Elfers Road and Marshall Road as shown on Figure 2. These portions of the pipeline would run generally along property lines and fence lines.

Alternative 2

New Water Pipeline from New Diversion Facility. Under this alternative, a new water pipeline would be constructed from the diversion point near the existing treatment plant outfall to the existing Diablo Grande transmission facilities. As with Alternative 1, the pipeline would be installed along the shoulders of roadways, entirely within county right-of-way.

Routes under consideration for this pipeline are illustrated on Figure 2. Potential routes include those listed for Alternative 1 as well as Olive Avenue, Walnut Avenue,

Elm Avenue, Sycamore Avenue, Almond Avenue, Pomelo Avenue, Pomegranate Avenue, Highway 33, and Ward Avenue. The route may also cross a small area of agricultural land between Highway 33 and Ward Avenue.

2.3.3 Conveyance/Use Element Existing Land Uses

Alternative 1

PWD Main Canal. The PWD main canal conveys water southwest from the PWD pump station. The canal runs to State Highway 33 at which point the water is conveyed under the highway via a pipeline capable of carrying approximately 35 cfs. At a point just east of Highway 33 is where the WHWD would take the water from the PWD.

The canal is concrete lined and is approximately fifteen feet wide between tops of bank. The canal includes five lift stations to lift the water about 50 feet from the San Joaquin River to Highway 33. The capacity of the main canal, through lifts 1 and 2 is about 250 cfs. From lifts three through 5, the capacity is about 150 cfs.

At Highway 33, the main canal terminates and conveys water beneath Highway 33 through a pipe capable of carrying about 35 cfs.

New Water Pipeline. Within the portions of the potential pipeline routes in county rights-of-way, the existing land uses consist of roadways with dirt shoulders. The pipeline would be installed within the dirt roadway shoulder in these areas.

Land uses on the agricultural lands under consideration for pipeline routes consist of row/field crops. No areas of orchards or other land uses are within the areas under consideration for pipeline installation.

Alternative 2

New Water Pipeline from New Diversion Facility. Within the portions of the potential pipeline routes in county rights-of-way, the existing land uses consist of roadways with dirt shoulders. The pipeline would be installed within the dirt roadway shoulder in these areas.

Land uses on the agricultural lands under consideration for the pipeline route consist of row/field crops. No areas of orchards or other land uses are within the areas under consideration for pipeline installation.

2.3.4 Conveyance/Use Element Surrounding Land Uses

Alternative 1

PWD Main Canal. The main canal runs southwest for approximately three miles, crossing State Highway 33 about one-half mile south of Patterson. The canal

passes through agricultural lands devoted to row and field crops and orchards consisting primarily of walnut and almond trees. Scattered single family dwelling units exist in the vicinity of the canal.

New Water Pipeline. The exact route of the new pipeline has not yet been determined. The routes under consideration exist within the same general vicinity. Land uses in this area consist of agricultural land devoted to row crops and orchards. Scattered dwelling units exists in the vicinity of the potential pipeline routes.

Alternative 2

New Water Pipeline from New Diversion Facility. The exact route of the new pipeline has not yet been determined. The routes under consideration exist within the same general vicinity. Land uses in this area consist of agricultural land devoted to row crops and orchards. Scattered dwelling units exists in the vicinity of the potential pipeline routes.

2.4 Initial Study Uses

This section contains two lists. The first list identifies the agencies that are expected to use the initial study in their decision making and the second list identifies the approvals for which this initial study will be used.

2.4.1 List of Agencies

Western Hills Water District

City of Patterson

Stanislaus County

Regional Water Quality Control Board, Central Valley Region

State Department of Fish and Game

State Department of Health Services

United States Army Corps of Engineers

2.4.2 List of Approvals

Building Permit - City

Building Permit - County

Encroachment Permit - County

Encroachment Permit - Caltrans (if new water line will be placed within Highway 33 right-of-way)

NPDES Discharge Permit - RWQCB

Streambed Alteration Permit - Department of Fish and Game

Encroachment Permit for Construction of new diversion facility in floodplain (if Diversion Alternative 2 is selected) - State Reclamation Board (Department of Water Resources)

Section 404 Permit - United States Army Corps of Engineers

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3.0 Environmental Evaluation

The following initial study checklist reflects the most current format recommendation from CEQA (CEQA Guidelines Appendix I). Each environmental issue discussed below is prefaced with a statement whether it is one of the following:

a. "Potentially Significant Impact";

b. "Potentially Significant Unless Mitigation Incorporated";

c. "Less-Than-Significant"; or

d. "No Impact".

Documents referenced in this checklist discussion are available at the City of Patterson Planning Department.

3.1 Land Use and Planning

Environmental Setting

Please refer to section two for environmental setting information.

Impact Analysis

Would the proposed project:

a. Conflict with general plan designation or zoning?

Less-than-Significant. The project site includes areas within both the City of Patterson and Stanislaus County.

Treatment/Discharge Element. The treatment plant is within the Patterson city limits. As such, construction of the ATS facility must conform with the city general plan. The general plan land use and zoning designation for the treatment plant is public/quasi public. This designation applies to publicly owned facilities and allows land uses consistent with those facilities. The ATS facility is associated with and furthers the activities carried out at the treatment plant and is therefore consistent with the city general plan.

Diversion Element. The PWD facilities (pump station and main canal) are owned and operated by the PWD. These facilities are located within Stanislaus County. If Alternative 1 is selected, the proposed project will make use of and will be located

entirely within the existing PWD facilities. If Alternative 2 is chosen, a new diversion facility will be constructed in the vicinity of the existing treatment plant outfall.

The Stanislaus County General Plan designates the area of either diversion structure as General Agriculture. The diversion structure, as part of a public facility constructed by the WHWD is in conformance with the activities allowed by this land use designation.

Conveyance/Use Element. The new pipeline associated with Alternative 1 or Alternative 2 of the diversion element to the existing WHWD water transmission facilities will be owned and operated by the WHWD. While the exact pipeline route has not yet been selected, the new pipeline will be located entirely within Stanislaus County and will require an encroachment permit issued by the County.

If Alternative 1 is selected, a small diversion structure will be constructed adjacent to the existing PWD lift station and the main canal, just west of Highway 33. This structure will require a building permit issued by Stanislaus County.

The County general plan designation for the area of these facilities is General Agriculture. These facilities, as public facilities constructed by the WHWD are in conformance with the activities allowed by this land use designation.

b. Conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project?

Less-than-Significant. The Water Quality Control Plan ("Basin Plan") for the Central Valley Region contains water quality policies and standards for areas including the San Joaquin River. The Basin Plan is applicable to the proposed project.

The following policy is applicable to the project:

> **Wastewater Reuse Policy.** The Regional Water Board encourages the reclamation and reuse of wastewater, including treated ground water resulting from a cleanup action, where practicable and requires as part of a Report of Waste Discharge an evaluation of reuse and land disposal options as alternative disposal methods. Reuse options should include consideration of the following, where appropriate, based on the quality of wastewater and the required quality for the specific reuses: industrial and municipal supply, crop irrigation, landscape irrigation, ground water recharge, and wetland restoration. Where studies show that Year-round or continuous reuse or land disposal of all of the wastewater is not practicable, the Regional Water Board will require dischargers to evaluate how reuse or land disposal can be optimized, such as consideration of reuse/disposal for part of the flow and seasonal reuse/disposal options (e.g. dry season land disposal).

Currently, effluent discharged from the treatment plant is deposited in evaporation/infiltration basins at the treatment plant. The proposed project would eliminate this land based reuse process. The effluent would undergo further

treatment and would then be deposited in the San Joaquin River pursuant to an NPDES permit. The same amount of water would be diverted from the River and used for domestic water supply. The overall water level of the River will not be affected. Therefore, the effluent previously undergoing land disposal would be reused for domestic water supply.

In addition, it is expected that the water exchange will beneficially affect the quality of water in the San Joaquin River (see Section 3.4). On these bases, the proposed project is considered to be consistent with this policy, as it provides for the reclamation and reuse of water.

c. Be incompatible with existing land use in the vicinity?

Less-than-Significant.

Treatment/Discharge Element. The proposed land uses within the treatment plant are an expansion of existing uses. Discharge of water from the ATS to the River will be either carried out within existing facilities and will result in repair of those facilities or will be carried out through installation of a new water pipeline and discharge facility. The water pipeline would be underground and would not be incompatible with any land uses. The discharge facility would be located on the west bank of the River and would be similar in nature to existing discharge facilities in the vicinity (such as that of the existing treatment plant) and is not considered to be incompatible with existing land uses.

Diversion Element. The diversion will occur within existing PWD facilities, or similar facilities at the new diversion location. Use of the existing PWD diversion facility would not change the present land uses. Construction of a new diversion facility in the vicinity of the existing treatment plant outfall would not interfere with activities along the San Joaquin River and is not considered to be incompatible with existing land uses.

Conveyance/Use Element. If Diversion Alternative 1 is selected, the water will be conveyed in the PWD main canal. Currently, the PWD conveys water in the main canal four to five months per year. Under Alternative A, water would be conveyed in the canal year-round. This use is compatible with the existing use of the canal.

Any new water pipeline will be installed in county rights-of-way and may cross some areas devoted to row/field crop production. In these areas, the pipeline would be installed along property lines and fence lines to the extent feasible. In all instances, the pipeline would be buried and the topsoil replaced. The project is not considered to be incompatible with either roadway or agricultural uses.

d. Affect agricultural resources or operations (e.g., impact to soils or farmlands, or impacts from incompatible land uses)?

Less-than-significant. See response to previous question. The new water pipeline may cross some areas of prime farmlands. However, considering that the pipeline will be installed along property lines and fence lines to the extent feasible and that

the pipeline will be buried and the original top soil replaced, the project is expected to have no long-term effect on agricultural resources or operations.

e. Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)?

No Impact. The proposed project involves no activities with the potential to divide physical arrangement of an established community.

3.2 Population and Housing

Impact Analysis

Would the proposed project:

a. Cumulatively exceed official regional or local population projections?

No Impact. The proposed project does not involve construction of any dwelling units. The water exchange will make water available for the Diablo Grande project which is located in an unincorporated area in western Stanislaus County. At buildout, this project will include 5,000 dwelling units. A specific plan and environmental impact report (EIR) have been prepared and adopted for this project by Stanislaus County (Diablo Grande, Inc., *Diablo Grande Specific Plan*, October 1993; Stanislaus County Department of Planning and Community Development, *Diablo Grande Specific Plan EIR*, October 1993). The EIR addressed regional and local population projections. This EIR is on file and is available for review at the Patterson City Hall.

A mitigation measure in the EIR states that residential development shall not be permitted unless the applicant can show to the County's satisfaction that adequate real water supplies have been made available, and that the environmental impacts of those sources have been studied and mitigated per CEQA requirements. (Diablo Grande EIR mitigation measure F-4). The proposed project is a response to this mitigation and this initial study serves as the required environmental documentation.

b. Induce substantial growth in the area either directly or indirectly?

No impact. The water diverted from the San Joaquin River will be used solely at Diablo Grande. As such, the project will not promote any additional growth within the incorporated City of Patterson. The project will supply water to the Diablo Grande project and will thereby permit development to the extent the water supply allows. The Diablo Grande project is part of the Stanislaus County General Plan, and its growth and development are expected. The growth inducing impacts of the Diablo Grande project were addressed in the certified Diablo Grande EIR.

c. Displace existing housing?

No Impact. There are no housing units on the proposed project site.

3.3 Geology

Environmental Setting

Patterson and its immediate vicinity is underlain by recent alluvial fan deposits. Along the Stanislaus River lie recent river and major stream channel deposits, recent basin deposits, and Pliocene and Pleistocene non-marine sedimentary deposits (Stanislaus Area Association of Governments, *Environmental Resources Management Element, Geology and Seismic Safety*, 1974).

The project site is relatively flat, trending gradually uphill towards the west. The elevation of the San Joaquin River near the treatment plant is 45 feet above mean sea level (USGS Topographic Map, Crows Landing Quadrangle). The elevation along the existing Diablo Grande water pipeline along Marshall Road ranges from 130 feet to 190 feet above mean sea level. There are no landslide hazards in the vicinity of the project site. The only major landform in the vicinity is the San Joaquin River, which forms the eastern border of the project site.

The project site, as well as all of California, is located in a seismically active region. No known faults pass directly through or across the project site. The Telsa-Ortigalita Fault Zone is the nearest fault zone to the project site. It runs in a generally north-south direction about twenty miles west of the project site. The probable maximum intensity of an earthquake in the Patterson area is VIII on the Modified Mercalli Intensity Scale (Ibid.). An earthquake of this magnitude results in considerable damage in ordinary structures; great in poorly built structures. Heavy furniture would be overturned.

There are three soil associations underlying the treatment plant and the agricultural lands that may be crossed by the new water pipeline: the Columbia-Grangeville-Temple Association, the Myers-Stomar Association, and the Capay Association (Stanislaus Area Association of Governments, *Stanislaus Area Environmental Resources Management Element, Soils*, 1974). These soils comprise Soil Capability Classes I, II and II (as defined by the USDA Soil Conservation Service). The treatment plant overlies class II and III soils, while the new water pipeline passes through areas of class I and II soils.

Class I and II soils are considered prime, while class III soils are considered to have medium capability. Class I soils have few limitations that restrict their use. Class II soils have some limitations in their natural characteristics that reduce the choice of plants or require moderate conservation practices. Class II soils have severe limitations that reduce the choice of plants or require special conservation practices, or both. Limitations include severe erosion hazard, coarse texture, poor drainage, hardpan layers, slow permeability, saline-alkali, restricted depth, and low moisture holding capacity. The class III soils on the project site suffer primarily from poor drainage.

Impact Analysis

Would the proposal result in or expose people to potential impacts involving any of the following:

a. Fault rupture?

No Impact. As stated in the environmental setting, this is unlikely because there are no known faults through the project site. In addition, the project will not result in the creation of dwelling units or long-term relocation of people to the project site which are not already recognized and addressed in the Diablo Grande EIR.

b. Seismic ground shaking?

Less-than-Significant. The proposed project site is located in a seismically active region. There is the potential for ground shaking at the project site that may impact structures. Ground shaking could cause structural damage and possibly human injuries. Potential threats to human safety and structural integrity from geologic hazards are potentially significant, however, all construction of structures (such as the diversion facility for the new pipeline) are required to comply with the Uniform Building Code and County standards. Compliance with these requirements will reduce hazards relating to seismic ground shaking to a level of insignificance. No mitigation measures are necessary.

c. Seismic ground failure, including liquefaction?

Less-than-Significant. Site specific information on ground failure and liquefaction potential is not available. The only portion of the project site not within existing structures or facilities is the new water line. While the water line may be affected should ground failure or liquefaction occur, this potential is inherent and is not considered to be a significant impact.

d. Landslides or mudflows?

Less-than-Significant. The project site is flat and is thus not susceptible to landslides. The area along the San Joaquin River is within the 100-year flood zone. Therefore, the portion of the project site in this area is potentially susceptible to mudflows. Flooding and associated mudflows would likely disrupt the proposed diversion and discharge of water to and from the River. However, such occurrence would not likely result in long-term damage to the project and is therefore not considered a significant impact.

e. Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill?

Less-than-Significant. Grading will occur in connection with construction of the ATS facility at the treatment plant, at the new discharge location, at the diversion from the PWD facilities just west of Highway 33 or at the new diversion location at the existing treatment plant outfall, and along the alignment of the new WHWD waterline. The

ATS facility will occupy approximately 55,000 square feet (sq.ft.), and involve the removal of about 2,000 cubic yards of soil. The diversion station at the PWD facility just west of Highway 33 (if Diversion Element Alternative 1 is selected) is expected to cover about 400 sq.ft. and involve the removal of about 100 cubic yards of soil. This facility will be connected to the existing PWD facility. If Diversion Element Alternative 2 is chosen, the new diversion facility would cover about 1,000 sq.ft. and involve the removal of about 200 cubic yards of soil. All potential discharge locations, with the exception of the use of the existing PWD water return ditch, would require about 1,000 square feet of land and the removal of about 200 cubic yards of soil.

The amount of trenching required for the new WHWD waterline will depend on the route chosen. The trench will be approximately three feet wide and four feet deep and would range in length from about 15,000 feet if the most direct route was selected, to 40,000 feet if the longest route was chosen. At the conclusion of construction for this element, the land will be returned to its native state through replacement of the topsoil.

The proposed grading is not anticipated to result in substantial erosion based on the limited amount of grading proposed, the flat topography, and the post-construction scenario: all graded areas will either be covered by structures or returned to their native state through replacement of the topsoil.

f. Expansive soils?

No impact. Based on review of the Stanislaus Area Environmental Resources Management Element, Soils and the Stanislaus County Soil Survey, no expansive soils appear to exist on the project site.

g. Unique geologic or physical features?

No Impact. The City and County general plans do not identify any such potential in the city or in the vicinity of the project site.

3.4 Water

Environmental Setting

The proposed project is intimately associated with the San Joaquin River. Water from the ATS facility will be discharged to the River and an equal amount of water will be diverted from the River. The discussion of water logically falls into three areas: the River, the discharge into the River, and the diversion from the River.

San Joaquin River. The Report for Waste Discharge prepared for the proposed project includes water quantity and quality data for the San Joaquin River including daily flow rates at the Patterson Bridge Monitoring Station from 1980 to 1994. (This document is available for review at the City of Patterson Planning Department.) The

monitoring station is located about 3,000 feet upstream from the treatment plant outfall and 1,000 feet upstream from the existing PWD diversion. The flow data for this station reflect the diversion of water by the PWD (see below).

The average San Joaquin River flow at the Patterson Bridge during the monitoring period (1980 to 1994) was 2,344 cfs. The monthly flows ranged from 231 to 25,494 cfs during this period. For the period 1992 to 1994, flows at the proposed discharge point were estimated as part of the Report for Waste Discharge. The Report calculated the minimum monthly flow rate, taking into account the PWD diversion to be 183 cfs (in September 1992) and the minimum daily flow during that period to be 92 cfs. The minimum average monthly flow is considered the "worst-case scenario" for the purposes of this initial study.

The quality of water in the San Joaquin River is excellent near its source in the Sierra Nevada. However, as it flows through the Valley, its water quality is impaired by each successive use. The River serves as a drain for return water and domestic and industrial wastes through the San Joaquin Valley. Both agricultural and domestic use and return contribute to this degradation. As flows decrease seasonally, concentrations of pollutants increase (Stanislaus County General Plan, Conservation /Open Space Element, p. 155).

The Report for Waste Discharge contains water quality data for the River including daily average temperature and electrical conductivity, and pollutant concentrations based on monthly grab samples. The average daily water temperature for the period from August 1985 through September 1993, based on the continuous temperature measurements by the USGS near the Patterson Road Bridge, was 64.7 degrees Fahrenheit, with an average electrical conductivity of 1,346 µmhos/cm. The pH of the water, as measured by the RWQCB for the period May 1985 through October 1995 ranged from 5.14 to 9.5. The dissolved oxygen content was measured by the RWQCB in December 1994, January 1995, and once in October 1995, for a total of seven measurements with an average dissolved oxygen content of 8.5 milligrams per liter.

Discharge to the River. The rate of discharge of the annual 1,000 AF to be discharged to the River depends, in part, on flow rates into the treatment plant. The flow rates are relatively uniform throughout the year. To carry out the discharge, ABES will have to obtain an NPDES Discharge Permit from the RWQCB. To provide water quality information necessary for the permit application, the pilot ATS facility was constructed at the treatment plant. As discussed in Section 2.4, the discharge from the facility was continuously monitored from October 1993 to December 1994. The discharge is currently recycled into the treatment plant's evaporation/infiltration ponds pending receipt of the NPDES permit.

The same water quality standards contained in the existing City NPDES permit are anticipated to apply to the ABES NPDES permit. Results of the monitoring show that these standards can be met by the ATS facility. The monitoring data is contained in the Report for Waste Discharge.

Under the Water Code section applicable to the exchange, (section 1485), the discharge and diversion rates will have to match to some extent. Under the draft

agreement between ABES and the city, storage of treated effluent is available in the treatment plant ponds. This will allow flexibility in the rate of discharge from the ATS facility to the River to ensure that the rates of discharge and diversion match to the degree required.

Diversion from the River. The diversion of 1,000 AF per year from the River is proposed to be carried out either by using an existing diversion facility owned and operated by the PWD (Diversion Element Alternative 1) or by the construction of a new diversion facility near the existing treatment plant outfall (Diversion Element Alternative 2). The following discussion addresses the relationship between the existing PWD diversion and the proposed WHWD diversion.

The PWD diversion has been in operation for many years. Over the past four years, the PWD has diverted water during the months of April through September. In 1994, water was also diverted during March. Table 1 presents the monthly PWD diversion totals over the past four years. The table also shows monthly rates of diversion based on the normal 14 hour pumping day. The maximum capacity of the PWD pumps is 250 cfs.

TABLE 1

PWD Monthly Diversion from San Joaquin River into the Main Canal

Month	Year			
	1992	1993	1994	1995
March			946* (26)**	
April	3,698 (106)	670 (19)	6,052 (174)	853 (25)
May	6,043 (168)	3,645 (102)	5,083 (143)	2,897 (81)
June	5,204 (150)	2,619 (75)	6,614 (191)	4,367 (126)
July	4,441 (124)	4,277 (119)	5,379 (150)	5,606 (156)
August	4,531 (130)	5,150 (148)	5,669 (163)	4,888 (141)
September	2,921 (81)	1,235 (34)	2,709 (76)	1,655 (46)
Total	**26,838**	**17,596**	**32,452**	**29,266**

* Acre-feet
** Cubic feet per second

Source: Draft Report of Waste Discharge for Western Hills Water District NPDES Discharge Permit to Discharge Reclaimed Wastewater from City of Patterson, Bookman-Edmonston Engineers, Inc. November 1995.

The average monthly diversion rate during the full months of pumping (May through August) was 135 cfs. The highest individual monthly rate was 191 cfs during June 1994.

The proposed WHWD diversion would occur in larger amounts during the summer months, and lesser amounts during the winter months. The expected diversion rates are shown in Table 2. The monthly rates are the same for both Diversion Element

Alternative 1 (using the PWD diversion facility) and Diversion Element Alternative 2 (new diversion facility).

Capacity is available in the treatment plant infiltration/evaporation ponds to temporarily store water from the ATS facility to match supply and demand at the Diablo Grande project as well as to match the amount and rate of water diverted from the San Joaquin River.

Diversion Element Alternative 1. Under this alternative, the existing PWD diversion facility would be used. Based on the historic pumping data, on a daily basis during the irrigation season, the diversion could be accomplished in one of two ways. First, the pumps could be run at a slightly higher rate during the day. During the month of July, when the highest diversion is proposed, the pumps would have to be operated at an average rate of about three percent higher than historical conditions to accommodate the diversion. Second, the pumps could be run at the same rate about fifteen minutes longer each day.

TABLE 2

Proposed Diversion from San Joaquin River

Month	Total Quantity	Percent of Total
January	30 AF	3%
February	40 AF	4%
March	60 AF	6%
April	80 AF	8%
May	110 AF	11%
June	120 AF	12%
July	150 AF	15%
August	130 AF	13%
September	100 AF	10%
October	80 AF	8%
November	60 AF	6%
December	40 AF	4%
Total	**1,000 AF**	**100%**

Source: Western Hills Water District

During the non-irrigation season, the daily amount of water to be diverted is substantially less. Options for diverting the water range from low level pumping throughout the day to diverting at a higher level for a shorter period of time.

Diversion Element, Alternative 2. Under this alternative, a new diversion facility would be constructed in the vicinity of the existing treatment plant outfall. The facility would include smaller pumps than the existing PWD diversion facility. The pumps would most likely be run on a 24-hour pumping day and would divert water at a much lower rate than the existing PWD pumps. During the highest diversion month

(July), the rate of diversion would be about three cfs. During the lower months, the required rate would be less than one cfs.

Impact Analysis

Would the proposal result in:

a. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?

No impact. No element of the proposed project would result in changes in absorption rates, drainage patterns, or the rate and amount of surface runoff.

b. Exposure of people or property to water related hazards such as flooding?

Less-than-Significant. The proposed project would have no overall effect on the quantity of water in the San Joaquin River and does not have the potential to expose people to flooding. The outfall to the River and the new diversion facility (if Diversion Element Alternative 2 is selected) would be subject to flooding. This potential is inherent in the type of use proposed and the impact of flooding to these facilities is not considered significant.

c. Discharge into surface waters or other alteration of surface water quality (e.g., temperature, dissolved oxygen or turbidity)?

Less-than-Significant. The applicant will be required to obtain an NPDES discharge permit prior to discharging treated water from the ATS facility to the River. Information in support of this permit has been obtained through operation of the pilot ATS facility. Results from monitoring of the pilot ATS facility indicate the following.

- Temperature, dissolved oxygen concentration, and pH of the wastewater were all increased by the ATS facility. The increase in pH is due to removal of dissolved carbon (as bicarbonate) from the wastewater and not from a chemical addition.
- Alkalinity, conductivity, and hardness of the wastewater were reduced by the ATS facility.
- Concentrations of all forms of nitrogen and phosphorus were reduced by the ATS system.
- All the concentrations found in the treatment plant secondary effluent, organic constituents measured as BOD, COD, and TOC were only minimally affected by the ATS facility.
- The ATS facility reduced turbidity and suspended solids and increased the percentage of UV transmittance of the wastewater. Installation of the complete ATS system including strainer and sand filters during the monitoring process significantly improved suspended solids removal.
- Coliform and viral numbers in the wastewater were reduced by the ATS facility.

These results indicate the standards likely to be applicable to the discharge can be met and the project will not adversely affect water quality in the River. Acquisition of the NPDES permit will ensure that the discharge meets all applicable water quality requirements. The permit will require regular water quality monitoring to ensure compliance with water quality standards. Should violations occur, discharge would be suspended.

d. Changes in the amount of surface water in any water body?

Less-than-Significant. The proposed project will result in the discharge of 1,000 AF of water per year into the San Joaquin River at the treatment plant outfall. The project will also result in the diversion of an equal amount of water. The diversion will occur either at the existing PWD diversion facility (Diversion Element Alternative 1), or in the vicinity of the treatment plant outfall (Diversion Element Alternative 2).

If Diversion Element Alternative 1 is selected, the point of discharge will be in relatively close proximity to the point of diversion, from immediately adjacent upstream to 1,000 feet ± upstream. There will be no measurable effect on the quantity of water in the River. Upstream of the diversion point and downstream of the discharge point, the quantity of water present in the River will be unaffected by the project. The project would slightly increase the amount of water in the stretch of River between the points of discharge and diversion.

If Diversion Element Alternative 2 is selected and the proposed discharge location is selected, the diversion will take place about 2,000 to 3,000 feet downstream from the discharge point. If the existing City of Patterson discharge is used, the diversion will be upstream, but relatively close to the discharge point. Upstream of the diversion point and downstream of the discharge point, the quantity of water present in the River will be unaffected by the project. The project would slightly increase the amount of water in the short stretch of River between the points of discharge and diversion.

As described above, for Diversion Element Alternative 1, the required amount of WHWD diversion could be accomplished by either running the PWD pumps at a slightly higher rate during the 14 hour pumping day, or running the pumps at the same rate required for the existing PWD diversion for a slightly longer period each day (a maximum of about one-quarter hour during July). As described in Section 2, the design capacity of pumps for Diversion Element Alternative 2 would be 3 cfs. In any case, the effect of this pumping on the quantity of water in the San Joaquin River would be *de minimis*, falling well within the monthly variation in pumping by the PWD.

The pumping rate at the diversion facility could slightly exceed the rate of deposit at the discharge point. Based on the estimated worst case monthly flow of 183 cfs, the monthly San Joaquin River flow during the worst-case month would be about 11,300 AF. The highest monthly diversion, 150 AF, less the 80 AF deposited, or 70 AF, would reduce worst-case monthly flow by about 0.6 percent. Viewed in a different manner, under Diversion Element Alternative 1, the project would result in the continuation of the existing PWD diversion for up to 15 additional minutes per day

during the low flow season. Under Diversion Element Alternative 2, the project would result in a 3 cfs diversion for 24 hours per day (as compared to the average summer PWD diversion of more than 100 cfs). This impact is insignificant.

Under Water Code section 1485, the rates and amounts of water discharged will be required to match to some extent. As described above, the treatment ponds are available to store effluent from the treatment plant prior to introduction to the ATS so that discharge of water to the River can be regulated to match diversions to the extent necessary. The SWRCB will be responsible for administering this section.

e. Changes in current, or the course or direction of water movements?

Less-than-Significant. The proposed project will result in the discharge of water to the San Joaquin River at a new discharge point and will result in the diversion of water from the River either at an existing diversion point or a new diversion point. In light of the amounts of water involved, the proposed project will not have any cognizable effect on current or the course of direction of water movement in the River.

f. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability?

Less-than-Significant. Currently the effluent discharged from the treatment plant is deposited in evaporation/infiltration basins at the treatment plant where it evaporates or percolates to groundwater. At present, the treatment plant produces about 950 AF of effluent per year. Evaporation from open water surfaces in the area amounts to about five feet of depth per year, most of which occurs during the summer months. If ponds are only temporarily used, weeds and vegetation may use three to four feet of water. Some vegetation can also draw out high groundwater percolated from adjacent ponds. In the absence of any measured data, it is estimated that an average of 200 to 250 acre-feet per year are evaporated or transpired from the 51 acres of ponds at the treatment plant. The balance of 700 to 750 AF percolates to groundwater. (Herb Greydanus, Bookman-Edmonston Engineering, Inc., personal communication with author, March 13, 1996).

Groundwater contours in central Stanislaus County and southern San Joaquin County show general movement northward toward and along the San Joaquin River. This condition is due primarily to percolation of applied irrigation water on both sides of the River. Percolation of treated effluent from the treatment plant adds a small increment to the groundwater that flows to the River and Delta. This increment is added throughout the year and probably averages about one cfs. Elimination of this flow will have an insignificant and immeasurable effect on the water levels in the River and the supply of water available to downstream diverters.

g. Alter the direction or rate of flow of groundwater?

Less-than-Significant. Refer to response to question "f." The project would have no measurable effect on the direction or rate of flow of groundwater.

h. Impacts to groundwater quality?

Less-than-Significant. Effluent that has undergone secondary treatment from the treatment plant is currently discharged into evaporation/infiltration basins within the treatment plant. The proposed project would eliminate this practice by treating the effluent and discharging the treated water into the San Joaquin River. The algae that will take in constituents of the effluent will be sold commercially. The project would have no negative impact on groundwater quality. Rather it may have some beneficial effect as it will eliminate the infiltration of secondary-treated effluent into the groundwater.

i. Substantial reduction in the amount of groundwater otherwise available for public water supplies?

Less-than-Significant. Refer to response to question "f." The project will result in the reclamation of effluent previously discharged to evaporation/infiltration basins for domestic use. The project will not result in a substantial reduction in the amount of groundwater otherwise available for public water supplies.

3.5 Air Quality

Environmental Setting

The proposed project is located in the San Joaquin Valley Air Basin (hereinafter "air basin"). The air basin includes the counties of Stanislaus, Fresno, Kings, Madera, Merced, San Joaquin, Tulare, and central and western Kern. The air basin is bound by mountain ranges on the east, west and south, and is dominated by a relatively flat valley floor. Significant contributors to the air basin's air quality problems are the region's geographic location and topographic features, climatic conditions, population growth, and economic activities. (1991 Air Quality Attainment Plan, San Joaquin Valley Unified Air Pollution Control District). The air basin is a non-attainment area for ozone and fine particulate matter.

Impact Analysis

Would the proposal:

a. Violate any air quality standard or contribute to an existing or projected air quality violation?

Potentially Significant Unless Mitigation Incorporated. Construction of the ATS facility, diversion structure and laying of the new pipeline will involve some grading. The total amount of grading is expected to be between two and four acres. Grading typically results in generation of fugitive particulate matter emissions. The effects of construction activities would increase dustfall and locally elevate levels of fine particulate matter downwind of construction activity. Construction dust has the

potential to create a nuisance at nearby properties. While the amount of grading proposed is relatively small, this impact is considered to be potentially significant.

Operation of the ATS facility, diversion element and conveyance element will not involve operation of any combustion engines and will not result in any pollutant emissions. No vehicle trips will be generated by the project apart from periodic trips for maintenance.

Mitigation Measure

1. Dust and other air pollutant emissions related to construction shall be reduced by:

   a. Retarding engine timing on diesel-powered equipment to reduce nitrogen oxide emissions. Maintaining existing gasoline-powered equipment in tune per manufacturer's instructions.
   b. Sufficiently watering all excavated or graded material.
   c. Ceasing all clearing, grading, earth-moving, or excavation activities when wind speeds exceed 20 miles per hour.
   d. Sufficiently watering or securely covering all material transported off-site.
   e. Minimizing the area disturbed by clearing, grading, earth-moving, or excavation operations.
   f. Seeding and watering all inactive portions of the construction site until cover is grown.
   g. Planting, paving, or returning portions of the site upon which work is complete to their natural state.
   h. Limiting vehicle speed to 15 miles per hour in unpaved areas.
   i. Treating all internal roadways and the equipment storage areas with chemical suppressant.
   j. Sweeping adjacent streets and roadways as needed to remove accumulated silt and soil.

   The City Planning Department shall be responsible for ensuring compliance with this measure.

Implementation of this mitigation will reduce air quality impacts associated with construction activities to a level of insignificance.

b. Expose sensitive receptors to pollutants?

Potentially Significant Unless Mitigation Incorporated. Refer to section "a" above. The potential new water pipeline routes pass by some residences. These receptors could be adversely affected from construction emissions. Implementation of the recommended mitigation measure will reduce potential impacts regarding sensitive receptors to a level of insignificance.

c. Alter air movement, moisture, or temperature, or cause any change in climate?

No Impact. The proposed project will not alter air movements, moisture, temperature or cause any change in climate.

d. Create objectionable odors?

No Impact. Monitoring of the pilot ATS plant included monitoring for creation of objectionable odors. Over the monitoring period, no objectionable odors were noticed (Report of Waste Discharge, Section 3). The consultant conducted a site visit on February 19, 1996 and observed the pilot ATS facility in operation. The consultant noticed no objectionable odors at that time. In any event, the ATS facility's location within the treatment plant, and lack of sensitive receptors in the area eliminate the risk of adverse impacts relating to odor generation.

3.6 Transportation/Circulation

Would the proposal result in:

a. Increased vehicle trips or traffic congestion?

Less-than-Significant. The proposed project will not directly result in generation of vehicle trips except during construction. The portions of the new water pipeline installed in existing county rights-of-way will be located in roadway shoulders. The shoulder will be returned to its previously existing condition subsequent to installation. This element of the project will result in no long term traffic impacts.

b. Hazards to safety from design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The project will not result in any permanent changes to roadways nor will it be incompatible with any existing uses.

c. Inadequate emergency access or access to nearby uses?

No Impact. The discharge and diversion elements of the proposed project will be accessible by emergency service providers. No changes to emergency access or access to nearby uses will result. The new water pipeline will be installed in county rights-of-way and possibly across lands devoted to agricultural production. Such crossings would be located along existing property lines and fence lines to the extent feasible. No problems with emergency access to either of these areas are anticipated.

d. Insufficient parking capacity on-site or off-site?

No Impact. The proposed project will not generate any increased demand for parking.

e. Hazards or barriers for pedestrians or bicyclists?

No Impact. The discharge and diversion elements of the project will not be installed in a way which limits areas now accessed by the public. The new pipelines will be installed underground and will have no effect on pedestrian or bicycle routes. The proposed project would not result in hazards or barriers to pedestrian access or bicyclists.

f. Conflicts with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact. The project will not result in the generation of increased traffic levels. No provisions for alternative transportation are required.

g. Rail, waterborne or air traffic impacts?

No Impact. The project will not result in rail, waterborne or air traffic impacts.

3.7 Biological Resources

The information contained in this section is based on a site visit conducted February 18, 1996 by representatives of EMC Planning Group Inc. and Zander Associates, Environmental Consultants and subsequent research and analysis. The environmental checklist questions are addressed for each of the three project elements in turn.

3.7.1 Treatment/Discharge Element

Environmental Setting

The treatment plant is located on an upland terrace adjacent to the San Joaquin River floodplain approximately one-half mile from the main channel of the River. A former meander of the river that appears to pond seasonally is located at the base of terrace approximately 50 feet from the treatment plant. Surrounding pasture lands are used to graze cattle and support a mix of native and non-native introduced grasses and herbs. Scattered willow (Salix spp.), poplar (Populus sp.) and valley oaks (Quercus lobata) can be found along the banks of the terrace and in the pasture lands. The main channel of the San Joaquin River supports areas of healthy and diverse woodland consisting of these and other typical riparian species along its banks interspersed with areas devoid of vegetation. The areas with little to no vegetation appear to be related to pasture uses including cattle grazing.

The riparian vegetation shelters many wildlife species. An important factor contributing to the heavy use of riparian areas by wildlife is its frequent proximity to other habitats such as agricultural lands. The combination of the two habitats provide food and shelter for wildlife species. For this reason, riparian habitat has been designated as a critical primary habitat by the State Department of Fish and Game. (Stanislaus County, *Stanislaus County General Plan, Conservation/Open Space Element*, p. 123).

The approximately 80-acre treatment plant property is occupied by various sewage treatment facilities including operations buildings, roads, the pilot ATS facility, evaporation ponds and sludge drying areas. The site can be characterized as disturbed and generally supports only ruderal (weedy) vegetation. However, the evaporation ponds provide some habitat for waterfowl. An excavated ditch crosses the property line at its northeastern boundary and follows a fenceline across approximately one-half mile of pasturelands to the river. The ditch was excavated to carry effluent to the designated discharge point at the River (the ditch has not been used for this purpose since 1983) and supports some hydrophytic (moisture-tolerant) vegetation.

The existing outfall is located on an open sandy bank which is substantially devoid of vegetation. The open area is bound by riparian woodlands about thirty feet downstream from the outfall. Upstream from the outfall, the open area continues about 50 yards and gradually blends in with stands of riparian vegetation. The new discharge locations are located in an area where there is some riparian vegetation.

Impact Analysis

Would the proposal result in impacts to:

a. Endangered, threatened or rare species or their habitats?

No Impact. The new ATS facility will consist of five new "runways," each the same size as the existing pilot project runway located on previously disturbed ground on the existing treatment plant property. Tertiary treated effluent will be discharged via a water pipeline from the treatment plant south through pasture land and open space to the San Joaquin River somewhere between a point near the existing Las Palmas Avenue Bridge to a point just south of the existing PWD pumping station. As an alternative, the effluent may be discharged in the existing treatment plant ditch or through newly installed pipeline along the ditch for some one-half mile across pasture lands to the San Joaquin River. Minor bank disturbance will occur as a result of the construction of a permanent outfall structure on the banks of the River (the existing treatment plant discharge point is located in a clearing along the banks of the River without riparian vegetation). No endangered, threatened or rare species of plants or animals are known or expected to occur in any of the areas that will be directly disturbed by project facilities as described here.

Results of monitoring of the pilot ATS facility indicate that effluent discharged from the ATS facility will meet or exceed the existing discharge requirements under the City's NPDES Permit with the exception of pH. The average annual pH of effluent from the pilot ATS facility was 9.48. The pH of the operating facility may be up to 10.5. The upper limit of the existing City discharge permit is 8.5. The pH of the effluent is increased under the ATS process as a consequence of the removal of dissolved carbon. Based on the level of exceedence of the standards and the level of dilution which will take place, it is not anticipated that any measurable changes in River pH will occur nor that any adverse biotic impacts will result. Consequently, no water quality-related effects on sensitive aquatic species are expected to result from the project.

In addition, the ABES will request a pH waiver as part of the permit application. The RWQCB will further review water quality impacts associated with the project in reviewing the permit application.

b. Locally-designated species?

No impact. No oak trees or other locally sensitive species of plants or animals are proposed to be removed or otherwise affected by construction and operation of the ATS and associated discharge facilities.

c. Locally-designated natural communities?

Potentially Significant Unless Mitigation Incorporated. The existing treatment plant outfall is located on a sandy bank in an area substantially devoid of riparian vegetation. The new outfall locations under consideration occur in areas of higher vegetation, yet not in areas where the destruction of substantial riparian habitat cannot be avoided. It does not appear that any riparian woodlands, native grasslands or other locally sensitive natural communities will be removed or otherwise affected by construction and operation of the ATS facility and associated discharge facilities. However, considering that riparian habitat has been designated as critical primary habitat and exists in the vicinity of the proposed improvements, engineering drawings should be developed in consultation with a qualified biologist to ensure that impacts of this element of the project on riparian habitat will be avoided or minimized.

d. Wetland habitat?

Less-than-Significant. No known natural wetland habitat will be removed or filled as a result of construction and operation of the ATS and associated discharge facilities. The existing effluent conveyance ditch supports wetland plant species but was excavated on dry land for that purpose. The new discharge will be by pipeline and will not affect any wetlands. Any work associated with construction of an outfall structure below the mean high water line of the San Joaquin River is expected to be minor and will likely qualify under the nationwide permit program of the Corps of Engineers. In any case, these activities will be subject to approval through separate authorizations from the Corps of Engineers and the Department of Fish and Game.

e. Wildlife dispersal or migration corridors?

No Impact. No wildlife dispersal or migration corridors will be affected by construction and operation of the ATS and associated discharge facilities.

Mitigation Measure

2. The final engineering drawings or construction plans depicting the precise location and design of the newly constructed outfall or the refurbished treatment plant outfall from the existing ditch to the San Joaquin River shall be developed in consultation with a qualified biologist to ensure that the improvements are sensitively placed to avoid or minimize disturbance to riparian habitat. The City Planning Director shall review and approve the

drawings or plans prior to submission of any application for a streambed alteration permit or, if one is not required, any permit allowing construction of the improvements.

3. The pipeline route and any outfall structure shall be designed to avoid loss of trees to the extent feasible. In the event that any trees must be removed, they shall be replaced with trees of the same species at a ratio of three to one. In this event, the applicant shall retain a qualified botanist to prepare a tree replacement plan detailing the size, planting methods and planting location of the replacement trees. This plan shall be subject to the review and approval of the City Planning Director.

Implementation of this mitigation measure will reduce impacts associated with the treatment and discharge element to a level of insignificance.

3.7.2 Diversion Element

Environmental Setting

Alternative 1. The PWD pump station is located on the west bank of the San Joaquin River directly adjacent to the main channel. The area immediately surrounding the facility is almost entirely paved with only remnant riparian vegetation alongside the perimeter fence. Pumps, piers and pipelines associated with the facility are installed within and below the flow line of the river. Pipelines from the pump station discharge into a concrete-lined channel ("PWD Main Canal") that carries diverted water to PWD users. Although sediment and aggressive hydrophytic plant species occur in the main canal, no substantial habitat exists for aquatic or wetland vegetation or wildlife.

Alternative 2. The new diversion facility will consist of an intake pipe and a pumping facility located within 100 feet downstream from the existing treatment plant outfall. The existing outfall is located on a sandy bank which, with the exception of a few willows, is devoid of vegetation. The open area is bound by riparian woodlands about thirty feet downstream from the outfall. Upstream from the outfall, the open area continues about 50 yards and gradually blends in with stands of riparian vegetation.

Impact Analysis

Would the proposal result in impacts to:

a. Endangered, threatened or rare species or their habitats?

Alternative 1. No Impact. The only change to existing facilities at the PWD pump station would be operational. Pump rates, or length of daily pumping time would increase slightly to accommodate the new flow requirements (see Section 3.4). This minor increase is not expected to affect any state or federally-listed rare, threatened

or endangered species of plants or animals or their habitats as the increase is minimal and the diversion would be downstream from the point of discharge.

Alternative 2. Less-Than Significant. Minor bank disturbance will occur as a result of the construction of a new diversion facility on the banks of the River. No endangered, threatened or rare species of plants or animals are known or expected to occur in any of the areas that will be directly disturbed by project facilities as described here.

b. Locally-designated species?

Alternative 1. No Impact. Refer to response to question "a."

Alternative 2. No Impact. No locally sensitive species of plants or animals will be removed or otherwise affected by construction the new diversion facility.

c. Locally-designated natural communities?

Alternative 1. No impact. Refer to response to question "a."

Alternative 2. Potentially Significant Unless Mitigation Incorporated. The diversion facility will occupy less than 400 square feet. Construction of the new diversion facility is not expected to result in removal or disturbance of substantial amount of riparian habitat. However, depending on the exact location and design of the facility, some riparian habitat disturbance may result. Considering that riparian habitat has been designated as critical primary habitat and exists in the vicinity of the proposed improvements, engineering drawings should be developed in consultation with a qualified biologist to ensure that impacts of this element of the project on riparian habitat will be avoided or minimized.

d. Wetland habitat?

Alternative 1. No Impact. Refer to response to question "a."

Alternative 2. No Impact. Refer to response to question "a." Construction and operation of the new diversion facility will not adversely affect any wetland or aquatic habitats.

e. Wildlife dispersal or migration corridors?

Alternative 1. No Impact. Refer to response to question "a."

Alternative 2. No Impact. Refer to response to question "a." Construction and operation of the new diversion facility will not adversely affect any wetland or aquatic habitats

Mitigation Measure

The following mitigation is applicable in the event Discharge Element Alternative 2 is selected.

4. The final engineering drawings or construction plans depicting the precise location and design of the new diversion facility shall be developed in consultation with a qualified biologist to ensure that the improvements are sensitively placed to avoid or minimize disturbance to riparian habitat. The City Planning Director shall review and approve the drawings or plans prior submission of any application for a streambed alteration permit.

Implementation of this mitigation will reduce impacts associated with the new diversion facility to a level of insignificance.

3.7.3 Conveyance/Use Element

Environmental Setting

Alternative 1. The area proposed for construction of the diversion station is located along the main canal just west of Highway 33. The area is on relatively high ground that forms the southeastern berm of the canal adjacent to an agricultural field. The berm appears to have been created by canal construction and supports only ruderal vegetation. The adjacent field is used to cultivate row crops on a rotational basis. The pipeline route would traverse this and adjacent fields in a southerly direction to the intersection of Marshall and Davis Roads. One alternative alignment would follow existing County road rights-of-way from the Marshall-Davis intersection to the ultimate connection with the Diablo Grande project (County right-of-way alternative). Another alternative would traverse agricultural fields in a more direct route to the Diablo Grande pumping station (Agricultural field alternative). The local agricultural lands are intensively cultivated for row crops, alfalfa or orchard crops and weeds and other non-productive vegetation are actively discouraged through spraying and cultivation. Figure 2 illustrates the pipeline routes under consideration.

Alternative 2. A new water pipeline would be constructed from the new diversion facility to be located near the existing treatment plant outfall, to the west along the existing ditch, across a small strip of agricultural land, to Olive Avenue. From here, the pipeline would proceed along roadway shoulders within county rights-of-way and possibly across the same agricultural fields as Alternative 1. Figure 2 illustrates the pipeline routes under consideration.

Impact Analysis

Would the proposal result in impacts to:

a. Endangered, threatened or rare species or their habitats?

No Impact.

Alternative 1. Construction of the new diversion station just west of Highway 33 would result in the direct disturbance of an approximately 2,000 square feet or smaller area. The proposed location of this facility is already disturbed and is adjacent to agricultural fields. No endangered, threatened or rare species of plant or

animal is known or expected to use this area. Installation of the pipeline through agricultural fields to Marshall and Davis Roads would result in temporary removal of soil, but is not expected to displace, disturb or otherwise affect any sensitive species since habitat for such species is not available in these fields. From the Marshall-Davis location, the County right-of-way alternative would follow existing road alignments and would not disturb any new (previously undisturbed) areas that could support sensitive species. Potential routes across agricultural lands would follow property/fence lines, farm roads, crop boundaries or other distinguishable landmarks to the extent feasible. No endangered, threatened or rare species of plant or animal is known or expected to use this area.

Alternative 2. From the Marshall-Davis location, the County right-of-way alternative would follow existing road alignments and would not disturb any new (previously undisturbed) areas that could support sensitive species. The potential routes across agricultural fields would follow property/fence lines, farm roads, crop boundaries or other distinguishable landmarks to the extent feasible. No endangered, threatened or rare species of plant or animal is known or expected to use this area.

b. Locally-designated species?

No Impact. No oak trees or other locally sensitive species of plants or animals will be removed or otherwise affected by construction of the new diversion station, or any of the potential new pipeline routes. The potential pipeline routes across agricultural fields would follow property/fence lines, farm roads, crop boundaries or other distinguishable landmarks to the extent feasible.

c. Locally-designated natural communities?

Potentially Significant Unless Mitigation Incorporated. No riparian woodlands, native grasslands or other locally sensitive natural communities will be removed or otherwise affected by construction of the new diversion station, or the new pipelines along county rights-of-way. The potential new pipeline routes across agricultural fields would follow property/fence lines, farm roads, crop boundaries or other distinguishable landmarks to the extent feasible. Site-specific alignment determinations should be made in the field to assure that no areas of natural habitat are disturbed by this alternative.

d. Wetland habitat?

No Impact. No known natural wetland habitat will be removed or filled as a result of construction of the new diversion station, the pipeline to Marshall-Davis or the County right-of-way alternative. The potential pipeline routes across agricultural fields would follow property/fence lines, farm roads, crop boundaries or other distinguishable landmarks to the extent feasible. Site-specific alignment determinations would be made in the field to assure that no areas of natural wetland habitat are disturbed by this alternative.

e. Wildlife dispersal or migration corridors?

No wildlife dispersal or migration corridors will be affected by construction of the new diversion station, the pipeline to Marshall-Davis or the County right-of-way alternative. The potential pipeline routes across agricultural fields would follow property/fence lines, farm roads, crop boundaries or other distinguishable landmarks to the extent feasible. Site-specific alignment determinations would be made in the field to assure that no areas of natural habitat are disturbed by this alternative.

Mitigation Measure

5. The final engineering drawings or construction plans depicting the precise route of the new water pipeline shall be developed in consultation with a qualified biologist to ensure that the improvements are sensitively placed to avoid or minimize disturbance to natural habitat. The City Planning Director shall review and approve the drawings or plans prior to issuance of any city or county approvals allowing construction of the pipeline.

Implementation of this mitigation will reduce impacts associated with the conveyance facilities to a level of insignificance.

3.8 Energy and Mineral Resources

Would the proposal result in:

a. Conflict with adopted energy conservation plans?

No Impact. The project's characteristics do not conflict with any such potential conservation plans. The project will result in the reclamation of water in that effluent previously deposited in evaporation/infiltration basins will be put to a more beneficial use, thereby conserving energy.

b. Use non-renewable resources in a wasteful and inefficient manner?

No Impact. Refer to section "a" above.

c. Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?

No Impact. The proposed project will not affect any known mineral resource.

3.9 Hazards

Would the proposal involve:

a. A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals, or radiation)?

No Impact. The use proposed will not involve activities known to have the potential for such occurrences. The active agent in the ATS facility are algae of the same

type that exist in the existing ponds in the treatment plant. No hazardous substances will be used in the operation of the project.

b. Possible interference with an emergency response plan or emergency evacuation plan?

No Impact. Based on a review of the Safety Element of the City General Plan, the proposed project would not interfere with said plans.

c. The creation of any health hazard or potential health hazard?

Less-than-Significant. Discharge of treated water to the San Joaquin River will be regulated by an NPDES permit issued and administered by the Regional Water Quality Control Board. Adherence to the conditions of this permit will ensure that no health hazards are created as a result of discharge of treated wastewater to the San Joaquin River. The permit will require regular monitoring of water quality to ensure the standards are met. Should water quality violations occur, discharge will be prohibited.

No other element of the project has the potential to result in creation of health hazards.

d. Exposure of people to existing sources of potential health hazards?

Less-than-Significant. Refer to section "c" above.

e. Increased fire hazard in areas with flammable brush, grass, or trees?

No Impact. No element of the project has the potential to increase fire hazards.

3.10 Noise

Environmental Setting

The proposed project is located in a rural area east and south of downtown Patterson.

Impact Analysis

Would the proposal result in:

a. Increases in existing noise levels?

Potentially Significant Unless Mitigation Incorporated. The proposed project will result in temporary construction noises. Construction noise is considered less-than-significant because of its short duration and because it is similar in nature and duration as the existing ambient noise caused by agricultural and treatment plant

equipment. There are no sensitive noise receptors in the immediate vicinity of the project site.

The only element of the project that will create noise during operation is the existing pumps located at the PWD diversion facility or the new diversion pumps.

Currently the PWD operates their pumps approximately 14 hours per day during the spring and summer months. These electric pumps create a continuing noise of less than 60 decibels during operation. No sensitive noise receptors are located in the vicinity of this facility. The proposed project would result in the operation of these pumps for up to 15 additional minutes per day, year round. This impact is insignificant.

Alternatively, a new diversion facility would be constructed in the vicinity of the existing treatment plant diversion facility. It is anticipated this facility would include substantially smaller pumps than those at the PWD diversion facility. There are no dwelling units in the vicinity of the proposed location of this facility. However, construction of this facility would result in creation of a new noise source that may adversely affect wildlife in the area. This is considered a potentially significant impact.

b. Exposure of people to severe noise levels?

Less-Than-Significant Impact. Refer to section "a" above.

Mitigation Measure

6. If Diversion Element Alternative 2 is selected, prior to initiating construction, the applicant shall demonstrate to the Planning Director that noise levels from the facility will not exceed 60 decibels at the nearest residence.

Implementation of this mitigation will reduce noise impacts associated with the new diversion facility to a level of insignificance.

3.11 Public Services

Would the proposal have an effect upon, or result in a need for a new or altered government services in any of the following?

a. Fire and police protection?

No Impact. The proposed project will increase incrementally the demand for these services and will not significantly impact the existing services.

b. Schools?

No Impact. The proposed project will not directly result in creation of any dwelling units. The project will result in provision of water to the Diablo Grande project which

includes dwelling units and will generate an increased demand for school services within Stanislaus County. Impacts of that project are addressed in the Diablo Grande Specific Plan and Diablo Grande EIR.

c. Maintenance of public facilities, including roads?

No Impact. The proposed project does not include any roadway improvements. Maintenance of the ATS facility will be the responsibility of ABES and maintenance of the new water pipeline will be the responsibility of the WHWD. Responsibility for maintenance of the diversion element will be based on the agreement between the WHWD and PWD for the PWD diversion, or by the WHWD for the new diversion. No significant public service impacts are expected with respect to maintenance of project facilities.

d. Other governmental services?

No Impact. There are no other governmental services known to be impacted.

3.12 Utilities and Service Systems

Would the proposal result in a need for new systems or supplies, or substantial alterations to the following utilities:

a. Power or natural gas?

Less-than-Significant. Operation of the proposed project will require electricity. Existing facilities are available to provide the required power. No new systems, supplied, or substantial alterations to existing facilities are anticipated to be required for the project.

b. Communications systems?

No Impact. The project will not require installation of any new communication systems.

c. Local or regional water treatment or distribution facilities?

Less-than-Significant. Currently, effluent from the treatment facility is discharged into evaporation/infiltration basins within the facility. The proposed project would result in additional treatment and discharge of the effluent into the San Joaquin River. In addition, the existing pilot ATS facility within the treatment plant would be expanded. The existing evaporation/infiltration ponds would still be available for such use subsequent to the project coming on-line. The project would effectively increase the capacity of the treatment plant to discharge effluent. No need for new systems or supplies would result from the project. The project would result in a substantial change in the use of effluent from the treatment plant. This impact is not considered to be significant.

d. Sewer or septic tanks?

No impact. The proposed project will not affect any sewer or septic tanks.

e. Storm water drainage?

No impact. The proposed project will not affect any storm water drainage system.

f. Solid waste disposal?

No impact. The proposed project will not result in the generation of solid waste requiring disposal. The algae generated by the project has viable economic uses.

g. Local or regional water supplies?

Less-than-Significant Impact. The proposed project will result in water reclamation in that water currently directed to evaporation/infiltration basins will be put to beneficial economic use. The project will partially satisfy the water demands of the Diablo Grande project. Without this project, the water demands of the Diablo Grande project would have to be satisfied through acquisition of water from other sources which would likely reduce available water supplies. Thus, the project is considered to have a beneficial impact on water supplies.

3.13 Aesthetics

Environmental Setting

The project sire is located in a rural area primarily east and south of the City of Patterson. The area is relatively flat. Along the San Joaquin River, views are defined by riparian vegetation. Aside from the treatment plant facilities, the PWD diversion facility and a public access facility, consisting of a small parking lot and restrooms, there are few manmade developments along the River in this area.

Would the proposed project:

a. Affect a scenic vista or scenic highway?

No Impact. The only aspect of the project that would be visible from a roadway would be the diversion station and pumping facility just west of Highway 33. Highway 33 is not designated as a scenic highway.

b. Have a demonstrable negative aesthetic effect?

Potentially Significant Unless Mitigation Incorporated. If Diversion Element Alternative 2 was selected, a new diversion facility would be constructed adjacent to the San Joaquin River in the vicinity of the existing outfall. This facility would be relatively small in size, however it would be visible by those using the River in the vicinity and could be considered a negative aesthetic feature, especially considering the relative lack of manmade structures in the area. This impact is considered to be potentially significant.

c. Create light or glare?

No Impact. No significant amount of light or glare will result from the proposed project.

Mitigation Measure

The following mitigation measure is applicable should Diversion Element Alternative 2 be selected.

7. The new diversion facility shall be designed and constructed in the least obtrusive manner possible. The construction plans for the new diversion facility shall be reviewed and approved by the City Planning Director prior to approval any permit allowing construction of the facility.

Implementation of this mitigation will reduce aesthetic impacts associated with the new diversion facility to a level of insignificance.

3.14 Cultural Resources

Environmental Setting

Almost all of the project site has been previously disturbed. Most of the know archaeological site in Stanislaus County are found in the higher (eastern) part of the county; few are know from central and western parts. This is due to the fact that the Native Americans utilized, but apparently did not intensively occupy, the grasslands lying between the Merced and Tuolumne Rivers. However, the apparent scarcity of archaeological sites is also at least partly due to intensive agriculture, and also reflects a lack of comprehensive cultural resources survey in the lower (central and western) portions of the county. (Michael Paoli and Associates, *New Ceres High School Site Acquisition and Development Project Draft EIR,* May 1995.)

Would the proposed project:

a. Disturb paleontological resources?

Less-than-Significant. Four elements of the proposed project require grading: the ATS facility, the discharge facility, the diversion facility, and the new water pipeline. Between two and four acres will require grading to accommodate the project. The ATS facility will be constructed within the existing treatment plant in an area that has already been subject to extensive disturbance. The discharge will be constructed along the bank of the San Joaquin Rover from near to 1,000 feet upstream of the PWD diversion facility. If diversion element Alternative 1 was selected, the diversion facility would be constructed adjacent to the PWD Main canal and pumping station in a previously disturbed area west of Highway 33. If Alternative 2 was selected, a new diversion facility would be constructed adjacent to the existing treatment plant outfall. The new water pipeline will be constructed within roadway shoulders and possibly across cultivated agricultural lands. The pipeline will be placed about three to four

feet below the ground surface. Each of these areas has been subject to previous disturbance. No deep grading will be required. No grading below six feet will be required. Considering these factors, the project will not have a significant impact on paleontological or cultural resources. However, the possibility remains that such resources are present. Implementation of the following mitigation measures provide proper procedures in the vent such resources are found.

b. Disturb archaeological resources?

Less-than-Significant. Refer to section "a" above.

c. Affect historical resources?

No Impact. No historical resources existing within the project site nor will any such resources be affected by the project.

d. Have the potential to cause a physical change which would affect unique ethnic cultural values.

No Impact. No aspects of the project have the potential to affect any such resources.

e. Restrict existing religious or sacred uses within the potential impact area?

No Impact. Refer to d above.

Mitigation Measure

The project is not anticipated to result in any significant adverse impacts to cultural resources. However, the following measure should be followed due to the possibility that such resources may be present.

8. All employees, contractors, and subcontractors for the project shall be informed, in writing, of the possibility that paleontological or archaeological resources may be uncovered during project activities. If any such materials are uncovered during project activities, work in the area or any area reasonably suspected to overlie adjacent remains shall be stopped until professional cultural resources evaluation and/or data recovery excavation can be planned and implemented. Appropriate measures to protect finds from accidents, looting, and vandalism shall be immediately implemented.

   After they have been professionally recorded in their place of discovery, paleontological or archaeological resources shall be transferred to an appropriate regional repository for preservation, research, and/or use in interpretive exhibits.

   If human remains are discovered, the Stanislaus County Coroner shall be notified immediately. The Coroner has two working days to examine the

remains and 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are Native American. The most likely descendants have 24 hours to recommend proper treatment or disposition of the remains, following the NAHC guidelines.

3.15 Recreation

Would the proposed project:

a. Increase the demand for neighborhood or regional parks or other recreational facilities?

No impact. The proposed project will not generate any such demand.

b. Affect existing recreational opportunities?

No Impact. The proposed project will not affect any existing recreational opportunities.

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4.0 Mandatory Findings of Significance

The purpose of this section is to determine whether the project will require more extensive environmental review. In accordance with CEQA Guidelines section 15065, a lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project if any one of the following conditions occur.

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare and endangered plant or animal life, or eliminate important examples of the major periods of California history or prehistory?

Response. The proposed project will not result in net reductions to the overall quantity or quality of water within the San Joaquin River. The project does not have the potential for substantial negative impacts to fish or wildlife directly or indirectly nor to major periods of California history.

b. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)

Response. Cumulative impacts shall be discussed when they are significant (CEQA Guidelines 15130.a). The discussion shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided of the effects directly attributable to the proposed project alone.

There are no aspects of the project with the potential to result in cumulatively significant impacts. The project will not result in any measurable net effects to the water quality or quantity in the San Joaquin River. The conveyance element of the project will produce no impacts with the potential to contribute to cumulatively significant impacts.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Response. No Impact. There are no impacts discussed in this initial study that would result in substantial adverse effects on human beings.

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5.0 Determination

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared. ____

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in the initial study have been included in the project. **A NEGATIVE DECLARATION** will be prepared. X

I find the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required. ____

Rod Simpson, Planning Director
City of Patterson

Date 6/16/96

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6.0 Report Preparers, Persons Contacted and Bibliography

6.1 Report Preparers

EMC Planning Group Inc.

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Joseph Karnes, Planning Associate
Project Manager, Report Preparer

Teri Wissler, Planner
Editor, Word Processing

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Graphics

Subconsultants

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Biotic Resources Analysis

6.2 Persons Contacted

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Lopez, Ignacio	City of Patterson, Public Works Director
Purgason, John	Aquatic BioEnhancement Systems
Purgason, Richard	Aquatic BioEnhancement Systems
Romano, David	Normoyle & Newman
Simpson, Rod	City of Patterson, Planning Director
Steele, Al	State of California, Department of Water Resources

6.3 Bibliography

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Stanislaus Area Association of Governments. *Stanislaus Area Environmental Resources Management Element, Water.* February 1974.

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State of California Regional Water Quality Control Board, Central Valley Region. *Water Quality Control Plan (Basin Plan) Central Valley Region.* Third Edition, 1994.

Appendix A

Initial Study Checklist

CITY OF PATTERSON
P.O. Box 667
Patterson, California 95363
(209) 892-2041

Initial Study
Environmental Assessment Checklist

STUDY PREPARED BY: *EMC Planning Group Inc.*

ADDRESS: *P.O. Box 414, Monterey, California 93940 (408) 649-1799*

PROJECT NAME: *Patterson Wastewater Treatment Plant Algal Turf Scrubber Initial Study*

PROJECT LOCATION: *City of Patterson Wastewater Treatment Plant, County of Stanislaus*

FILE NO: _____ DATE PREPARED: *February 26, 1996*

I. BACKGROUND

1. Name of Applicant: *Aquatic Bioenhancement Systems and Western Hills Water District*
2. Address of Applicant: *P.O. Box 2519, Sugarland, TX 77478, 801 10th St., 5th Floor, Ste. 1, Modesto, CA 95359*
3. Phone Number of Applicant: (713) 240-4077, (209) 521-9521
4. County Tax Assessor's Parcel Number(s): *No specific Assessor's Parcel Numbers; Located on Book and Page as follows: 47-37, 48-04, 48-03, 48-07, 48-08, 48-09 and 48-41.*
5. Acreage of Property: *Approximately 4 acres total*
6. Zoning: *Public/Quasi Public, General Agriculture.*

II. ENVIRONMENTAL IMPACTS

Notes:

A. An explanation is provided for each of the following questions in the attached initial study. Therefore, this checklist must be read in conjunction with the initial study.

B. All answers must take account of the whole action involved, including off-site, as well as on-site, cumulative, as well as project-level, indirect, as well as direct, and construction, as well as operational impacts.

C. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

D. "Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact". Mitigation measures must be described and there should be a brief explanation as to how they reduce the impact to a less than significant level.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
I. LAND USE AND PLANNING. Would the proposal:				
a) Conflict with general plan designation or zoning?	❑	❑	❑	■
b) Conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project?	❑	❑	■	❑
c) Be incompatible with existing land use in the vicinity?	❑	❑	❑	■
d) Affect agricultural resources or operations (e.g. impacts to soils or farmlands, or impacts from existing adjacent farming activities)?	❑	❑	■	❑
e) Disrupt or divide the physical arrangement or an established community?	❑	❑	❑	■
II. POPULATION AND HOUSING. Would the proposal:				
a) Cumulatively exceed official regional or local population projections?	❑	❑	❑	■
b) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?	❑	❑	❑	■
c) Displace existing housing, especially affordable housing?	❑	❑	❑	■
III. GEOLOGY. Would the proposal result in or expose people to potential impacts involving:				
a) Fault rupture?	❑	❑	❑	■
b) Seismic ground shaking?	❑	❑	■	❑
c) Seismic ground failure, including liquefaction?	❑	❑	■	❑
d) Landslides or mudflows?	❑	❑	■	❑
e) Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill?	❑	❑	■	❑
f) Expansive soils?	❑	❑	❑	■
g) Unique geologic or physical features?	❑	❑	❑	■

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. WATER. Would the proposal result in:				
a) Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	☐	☐	☐	■
b) Exposure of people or property to flooding?	☐	☐	■	☐
c) Discharge into surface waters or other alteration of surface water quality?	☐	☐	■	☐
d) Changes in the amount of surface water in any water body?	☐	☐	■	☐
e) Changes in currents, or the course or direction of water movements?	☐	☐	■	☐
f) Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability?	☐	☐	■	☐
g) Altered direction or rate of flow of groundwater?	☐	☐	■	☐
h) Impacts to groundwater quality?	☐	☐	■	☐
i) Substantial reduction in the amount of groundwater available for public water supplies?	☐	☐	■	☐
V. AIR QUALITY. Would the proposal:				
a) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	■	☐	☐
b) Expose sensitive receptors to pollutants?	☐	■	☐	☐
c) Alter air movement, moisture, or temperature, or cause any change in climate?	☐	☐	☐	■
d) Create objectionable odors?	☐	☐	☐	■
VI. TRANSPORTATION/CIRCULATION. Would the proposal result in:				
a) Increased vehicle trips or traffic congestion?	☐	☐	■	☐
b) Hazards to safety from design features (e.g. sharp curves or dangerous intersection) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	■

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Inadequate emergency access or access to nearby uses?	☐	☐	☐	■
d) Insufficient parking capacity on-site or off-site?	☐	☐	☐	■
e) Hazards or barriers for pedestrians or bicyclists?	☐	☐	☐	■
f) Conflicts with adopted policies supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	■
g) Rail or air traffic impacts?	☐	☐	☐	■
VII. BIOLOGICAL RESOURCES. Would the proposal result in impacts to:				
a) Endangered, threatened, or rare species or their habitats?	☐	☐	☐	■
b) Locally designated species (e.g. oaks)	☐	☐	☐	■
c) Locally designated natural communities (e.g. oak forest)	☐	■	☐	☐
d) Wetland habitat (e.g. marsh, riparian, and vernal pool)?	☐	☐	■	☐
e) Wildlife dispersal or migration corridors?	☐	☐	☐	■
VIII. ENERGY				
a) Conflict with adopted energy conservation plans?	☐	☐	☐	■
b) Use non-renewable resources in a wasteful and inefficient manner?	☐	☐	☐	■
c) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	■
IX. HAZARDS. Would the proposal involve:				
a) A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals, or radiation)?	☐	☐	☐	■
b) Possible interference with an emergency response plan or emergency evacuation plan?	☐	☐	☐	■

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) The creation of any health hazard or potential health hazard?	☐	☐	■	☐
d) Exposure of people to existing sources of potential health hazards?	☐	☐	■	☐
e) Increase fire hazard in area with flammable brush, grass, or trees?	☐	☐	☐	■
X. NOISE. Would the proposal result in:				
a) Increases in existing noise levels?	☐	■	☐	☐
b) Exposure of people to severe noise levels?	☐	☐	■	☐
XI. PUBLIC SERVICES. Would the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:				
a) Fire protection?	☐	☐	☐	■
b) Police protection?	☐	☐	☐	■
c) Schools?	☐	☐	☐	■
d) Maintenance of public facilities including roads?	☐	☐	☐	■
e) Other governmental services?	☐	☐	☐	■
XII. UTILITIES AND SERVICE SYSTEMS. Would the proposal result in a need for new systems or supplies, or substantial alterations to the following utilities:				
a) Power or natural gas?	☐	☐	■	☐
b) Communications systems	☐	☐	☐	■
c) Local or regional water treatment or distribution facilities?	☐	☐	■	☐
d) Sewer or septic tanks?	☐	☐	☐	■
e) Storm water drainage?	☐	☐	☐	■
f) Solid waste disposal?	☐	☐	☐	■

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Local or regional water supplies?	☐	☐	■	☐
XIII. AESTHETICS. Would the proposal:				
a) Affect a scenic vista or scenic highway?	☐	☐	☐	■
b) Have a demonstrable negative aesthetic effect?	☐	■	☐	☐
c) Create light or glare?	☐	☐	☐	■
XIV. CULTURAL RESOURCES. Would the proposal:				
a) Disturb paleontological resources?	☐	☐	■	☐
b) Disturb archaeological resources?	☐	☐	■	☐
c) Affect historical resources?	☐	☐	☐	■
d) Have the potential to cause a physcial change which would affect unique ethnic cultural values?	☐	☐	☐	■
e) Restrict existing religious or sacred uses within the potential impact area?	☐	☐	☐	■
XV. RECREATION. Would the proposal:				
a) Increase the demand for neighborhood or regional parks or other recreational facilities?	☐	☐	☐	■
b) Affect existing recreational opportunities?	☐	☐	☐	■

Appendix F

Reconnaissance Evaluation of Ground Water Resources Available to the City of Patterson, Groundwater Monitoring Data

CITY OF PATTERSON

PATTERSON, CALIFORNIA

RECONNAISSANCE EVALUATION OF GROUND WATER RESOURCES AVAILABLE TO THE CITY OF PATTERSON

Bookman-Edmonston Engineering, Inc.
Sacramento, California

August 1991

RECONNAISSANCE EVALUATION OF GROUND WATER RESOURCES AVAILABLE TO THE CITY OF PATTERSON

The City of Patterson is located within Stanislaus County on the western edge of the San Joaquin Valley, approximately 13 miles southwest of Modesto. The city has a current population of about 9,000 and within its draft general plan is anticipating potential growth up to a total population of about 21,000 by the year 2010. The purpose of this memorandum is to evaluate the ground water supplies available to the City of Patterson and (on a preliminary basis) determine if the ground water resources alone are sufficient to support this level of growth. This memorandum is organized into subsections which individually consider the geology and hydrology of the Patterson area. Based on this evaluation, it is concluded that ground water resources are sufficient to allow the projected increase in population.

Geology

Geologic features of the ground water basin underlying the City of Patterson were evaluated by reference to published reports, particularly a 1971 USGS Open File Report, "Geology Hydrology and Water Quality of the Tracy-Dos Palos Area", and USGS Water Supply Papers 1469 and 1618. The geology underlying the City of Patterson can best be described by an understanding of its relationship to the overall geology of the Central Valley, which is bordered on the east by the Sierra Nevada and on the west by the Coast Range. This valley is a topographic and structural basin which has been filled with a thick sequence of marine and continental sedimentary deposits. Attachment 1 illustrates a generalized geologic cross-section in the general vicinity of Patterson showing the substantial thickness of both marine and continental sediments. As also shown, the fresh water resources are limited to the upper portions of the continental sediments. The principal water-bearing deposits in this vicinity are sands and silts containing lenses of poorly sorted coarse sands and gravels.

Typically, the deposits become more fine-grained proceeding easterly from the Coast Range, with floodplain, lacustrine and marsh deposits underlying the valley trough. Available

data indicate that the deposits underlying the City of Patterson are westerly of the geologic trough of the Central Valley. Several clay or silty clay "tongues" extend out of these deposits, which were deposited in widespread prehistoric lakes.

The most extensive of these clays, commonly termed the "E" clay or the "Corcoran" clay, occurs beneath the City of Patterson and in the adjacent areas. USGS Water Supply Paper 1469 indicates the clay occurs at an elevation of about 150 feet below sea level. The USGS Open File Report indicates that the E-clay is about 40 to 60 feet thick in the vicinity of Patterson, and the top of the clay occurs at an approximate depth of 150 feet.

Shown on Attachment 2 is a more detailed cross section located south of the City of Patterson. The section shows that the E-clay eventually pinches out toward the western and eastern margins of the basin. Areas to the east and, to a lesser extent, to the west serve as the "forebays" to the confined deposits below the E-clay. The extensive quantities of water beneath the E-clay are under pressure due to hydraulic continuity with the forebay areas.

The Open File Report defines various lithofacies, soil classifications based on the percentage of coarse-grained materials. Materials above the E-clay in the vicinity of the City of Patterson belong to lithofacies c, d and e with coarse-grained material comprising from 33 to 80 percent of the deposits. Materials below the E-clay belong to lithofacies b and c, with coarse-grained material comprising 20 to 50 percent of the deposits.

Hydrology

Ground water apparently occurs in the Patterson area under both unconfined and confined conditions, with the E-clay constituting a known confining layer. Semi-confined conditions have also been reported which can result from partial confinement beneath clays of limited lateral extent and hydraulic thickness. In particular, a "white clay" has been identified (located above the E-clay) which also can provide confinement.

Movement of ground water can be assessed by evaluating water levels with ground water movement occurring from areas of high levels to areas with relatively depressed levels. Shown on Attachment 3 are ground water levels in the unconfined aquifer in the vicinity of the City of Patterson as contoured by the DWR for the year 1987. These contours indicate ground water movement beneath Patterson from the Coast Range towards the San Joaquin River. In 1952,

water level data presented in USGS Water Supply Paper No. 1469 indicate that the unconfined to semi-confined ground water body received substantial replenishment from canals carrying water diverted from the San Joaquin River, which built a ground water mound beneath Highway 33, extending from Orestimba Creek to approximately the City of Patterson.

Contours of 1952 water levels for the confined system presented in USGS Water Supply Paper No. 1469 indicated a generally southwesterly flow towards a depression near the edge of the basin. The USGS noted that gradients southwest of this trough are substantially steeper than those in the Patterson area and inferred that this indicated little replenishment is derived from the west. Data were not sufficient in that study to determine if two separate ground water bodies occur in this trough area southwest of Patterson or whether the confined layers are less effective in this area and that there is a single merged ground water body. Attachment 4 (from the Open File Report) shows water level elevations within the confined aquifer system in the vicinity of Patterson. These contours indicate general ground water movement from southwest to northeast, with a relatively sharp gradient into the Patterson area.

Attachments 5 and 6 show locations and hydrographs of selected wells in the vicinity of the City of Patterson. These wells demonstrate relatively stable water level conditions.

Construction characteristics (particularly well depths and perforated intervals) of the City of Patterson wells were compared to the depth to the E-clay. Based on this evaluation, it appears that the City's wells are composite wells (drawing water from both confined and unconfined aquifers). Water Supply Paper 1618 contains a tabulation on yield characteristics of irrigation wells. For Township 5 South, Range 8 East (which contains the City of Patterson), three tests were available which indicated an average specific capacity of 18 gallons per minute (gpm) per foot of drawdown. This indicates a transmissivity on the order of about 27,000 to 36,000 gallons per day per foot. Well data are also available in the Open File Report. For Township 5 South, Range 8 East, the average specific capacity for wells completed above the E-clay was about 30 gpm per foot. Data for a well extending below the E-clay indicated a specific capacity of about 12 gpm per foot.

Water Supply Paper 1618 also contained an estimate of the specific yield for study subareas. The study subarea containing the City of Patterson (Tracy-Patterson subarea) had an average specific yield of about 10.6 percent for a depth interval between 10 and 200 feet.

Hydrologic Balance

Performance of a hydrologic balance requires estimation of the elements of supply and demand for a given area in order to determine if there is a surplus or a deficit in the water supply. A previously performed hydrologic balance for the area of interest appears to currently not exist. However, some hydrologic evaluations were available for relatively large areas which include the City of Patterson. DWR Bulletin 118-80 defined various ground water basins within the San Joaquin Valley, based largely on institutional and water management considerations. Patterson is contained within the Delta-Mendota Basin. This bulletin also identified basins "subject to critical conditions of overdraft"; however, the Delta-Mendota Basin was not classified as such.

Hydrologic data were also developed as a part of the DWR's ground water modeling effort. For the model, the Valley was subdivided into detailed analysis units (DAU's) for which hydrologic balances were prepared (except for the ground water flow component which was computed in the model). The City of Patterson is contained within DAU 216. Shown on Attachment 7 is the hydrology used for DAU 216. A brief examination of this hydrology indicates that for almost all years recharge to the ground water exceeds the total ground water pumpage. This implies that any imbalance which does exist in this area would be attributable to a net ground water outflow from the area rather than a lack of recharge to support the ground water pumping.

The City of Patterson is anticipating growth into the adjoining lands contained within the Patterson Water District, West Stanislaus Irrigation District and Del Puerto Water District. Patterson Water District encompasses approximately 14,000 acres and is generally located north, south, and east of the City of Patterson. The Patterson Water District serves irrigation demands within its boundaries through a combination of San Joaquin River diversions and a contractual surface water supply from the Central Valley Project (Delta-Mendota Canal). Typically, the District delivers about 45,000 acre-feet per year.

The West Stanislaus Irrigation District lies westerly of the City of Patterson and delivers water for irrigated agriculture. The District's water supplies include diversions from the San Joaquin River and also a contractual surface water supply from the Central Valley Project. In

addition, the District owns and operates four deep wells. The Del Puerto Water District receives a contractual surface water supply (12,060 acre-feet per year) from the Central Valley Project.

The districts are largely developed to irrigation, with only about 1500 people within the Patterson Water District and 3500 within the West Stanislaus Irrigation District. Therefore, relatively small demands for water for non-irrigation uses occur within these districts. Further, the districts deliver substantial quantities of surface water, indicating limited reliance on ground water resources on average.

A hydrologic balance for the local affected area was developed as follows:

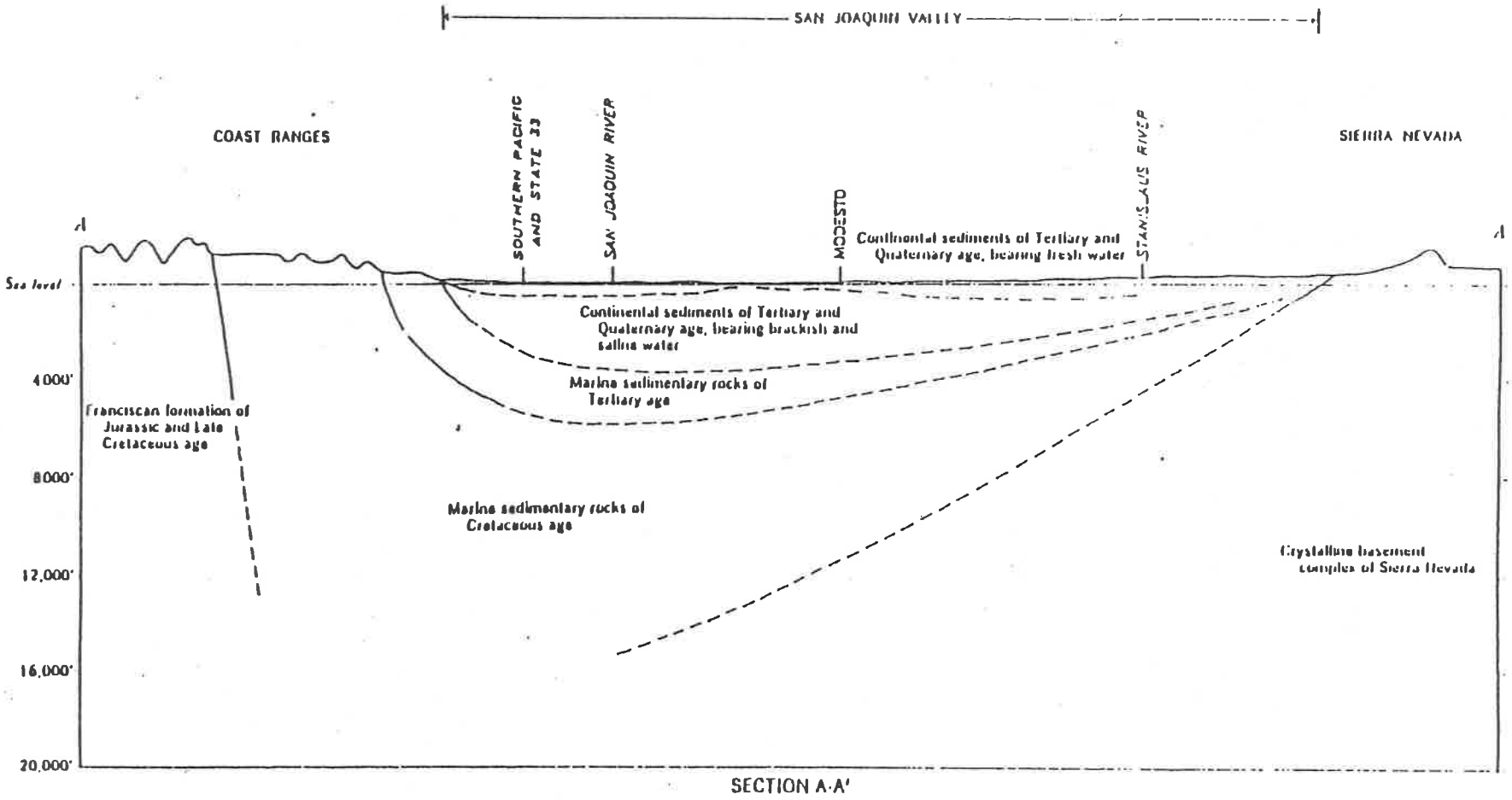
Potential recharge from applied water within the districts was estimated assuming 25 percent of the applied water would percolate to the ground water. This assumption equates to a ground water recharge of 35,000 acre-feet per year. Current ground water extractions from this area include approximately 1600 acre-feet per year for the City of Patterson, approximately 700 acre-feet per year estimated for domestic use within the two districts (based on a population of 5,000) and approximately 13,000 acre-feet per year pumped from the West Stanislaus Irrigation District Wells (estimated assuming 2000 gpm per well which would be operated at a 50 percent load factor). This results in a total estimated ground water demand for this area of about 15,000 acre-feet per year. The comparison between ground water recharge and demand indicates that return flows from irrigation exceed ground water demands. Even as irrigated lands are converted to urban use, the balance of potential ground water recharge to ground water extraction remains positive.

Evaluation of Ground Water Supply

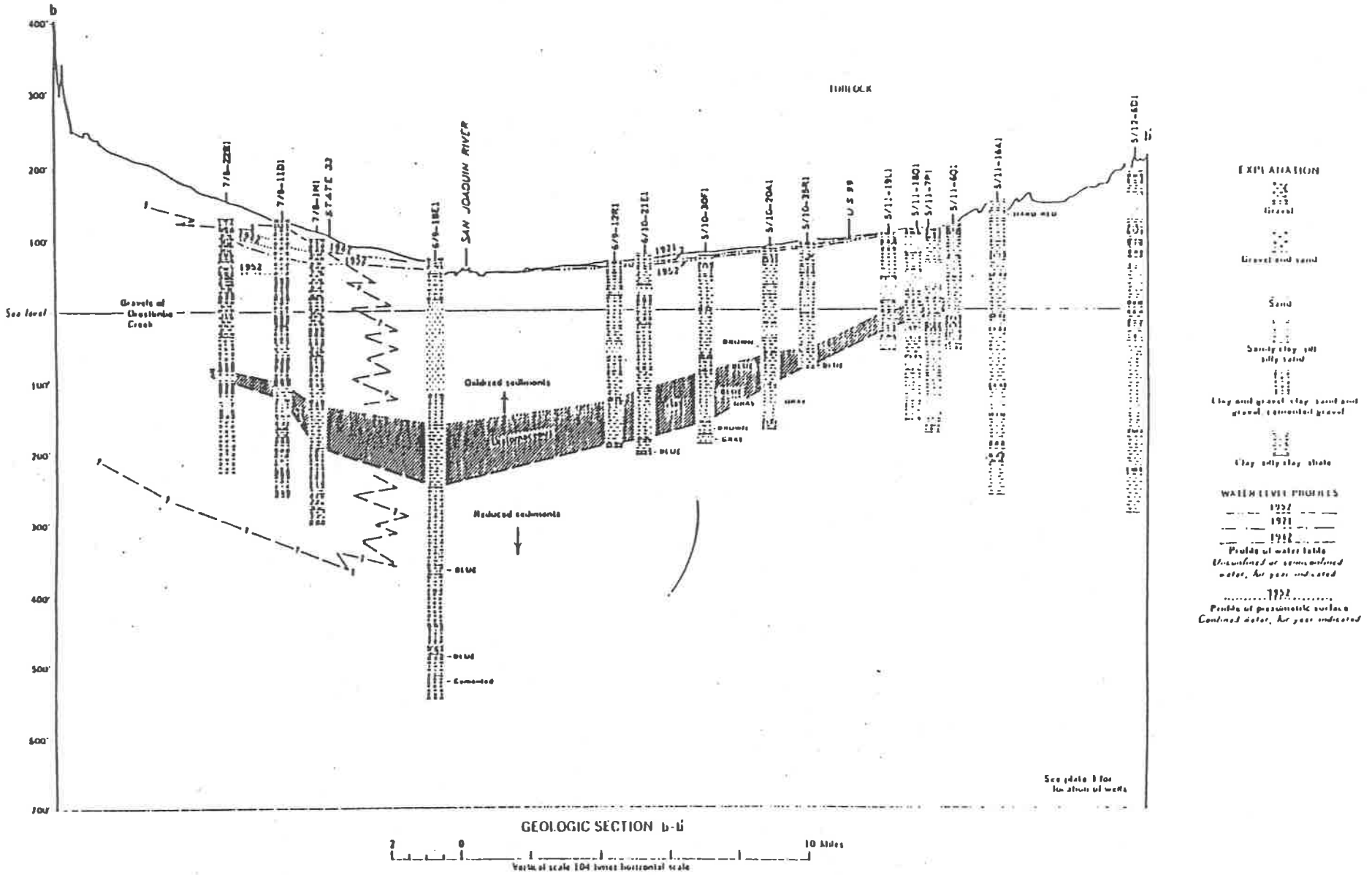
The data presented above indicates that (on a reconnaissance level) ground water supplies will be adequate to fully meet increases in water demands in the City of Patterson to the currently planned population of 21,000. Available data indicate most of the water demands on the adjoining lands are met with surface water supplies and it is roughly estimated that the return flows from irrigation exceed the anticipated average annual demand for ground water in the area. These results are consistent with DWR Bulletin 118-80, with hydrology for model DAU 216 and with hydrologic data contained in the USGS Open File Report. This is also supported by the stable water levels in wells in the vicinity of Patterson. The above does not consider underflow

into or out of the area. but the substantial return flows do indicate that sufficient ground water recharge is available within this area to support additional extractions. Further, the additional extractions anticipated for the City are minimal in relation to the available ground water resource.

It should be noted that, while the overall hydrologic balance for the area appears to be favorable, the substantial direct recharge in the area largely contributes to the unconfined aquifer system and available data are not sufficient to fully describe the relationship between the unconfined and confined aquifers. A potential concern for expanded use of ground water would be water quality. City of Patterson water data indicate the City's wells have met all EPA and Department of Health Services standards to date. However, available data indicates that some of the ground water near the City of Patterson exceeds secondary drinking water standards for TDS, chloride and sulfate and care in selecting zones for well perforations will be needed.


SAN JOAQUIN VALLEY
COAST RANGES
SOUTHERN PACIFIC AND STATE 33
SAN JOAQUIN RIVER
MODESTO
STANISLAUS RIVER
SIERRA NEVADA
A
A'
Sea level
4,000'
8,000'
12,000'
16,000'
20,000'
Continental sediments of Tertiary and Quaternary age, bearing fresh water
Continental sediments of Tertiary and Quaternary age, bearing brackish and saline water
Marine sedimentary rocks of Tertiary age
Franciscan formation of Jurassic and Late Cretaceous age
Marine sedimentary rocks of Cretaceous age
Crystalline basement complex of Sierra Nevada

SECTION A-A'



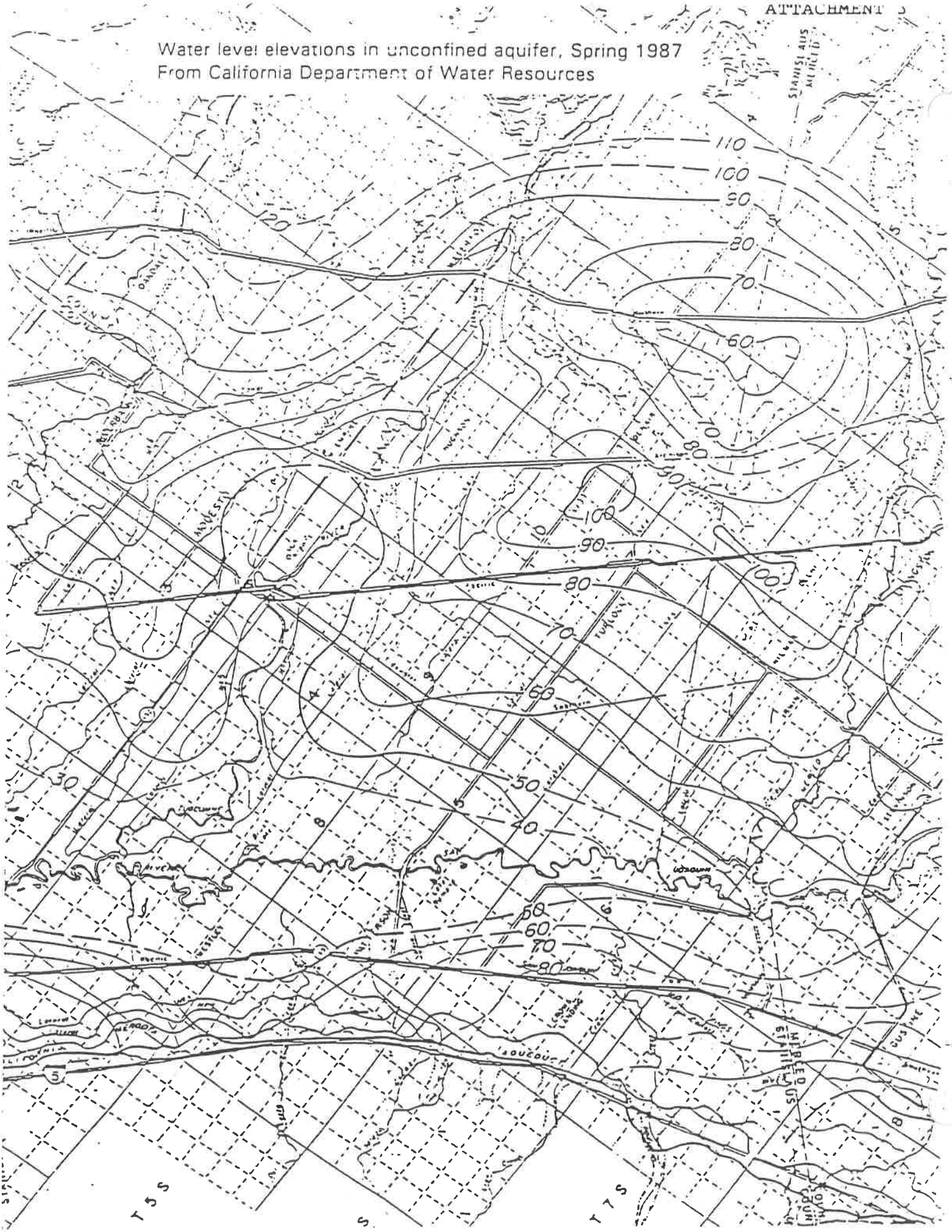
GEOLOGIC SECTION b-b'

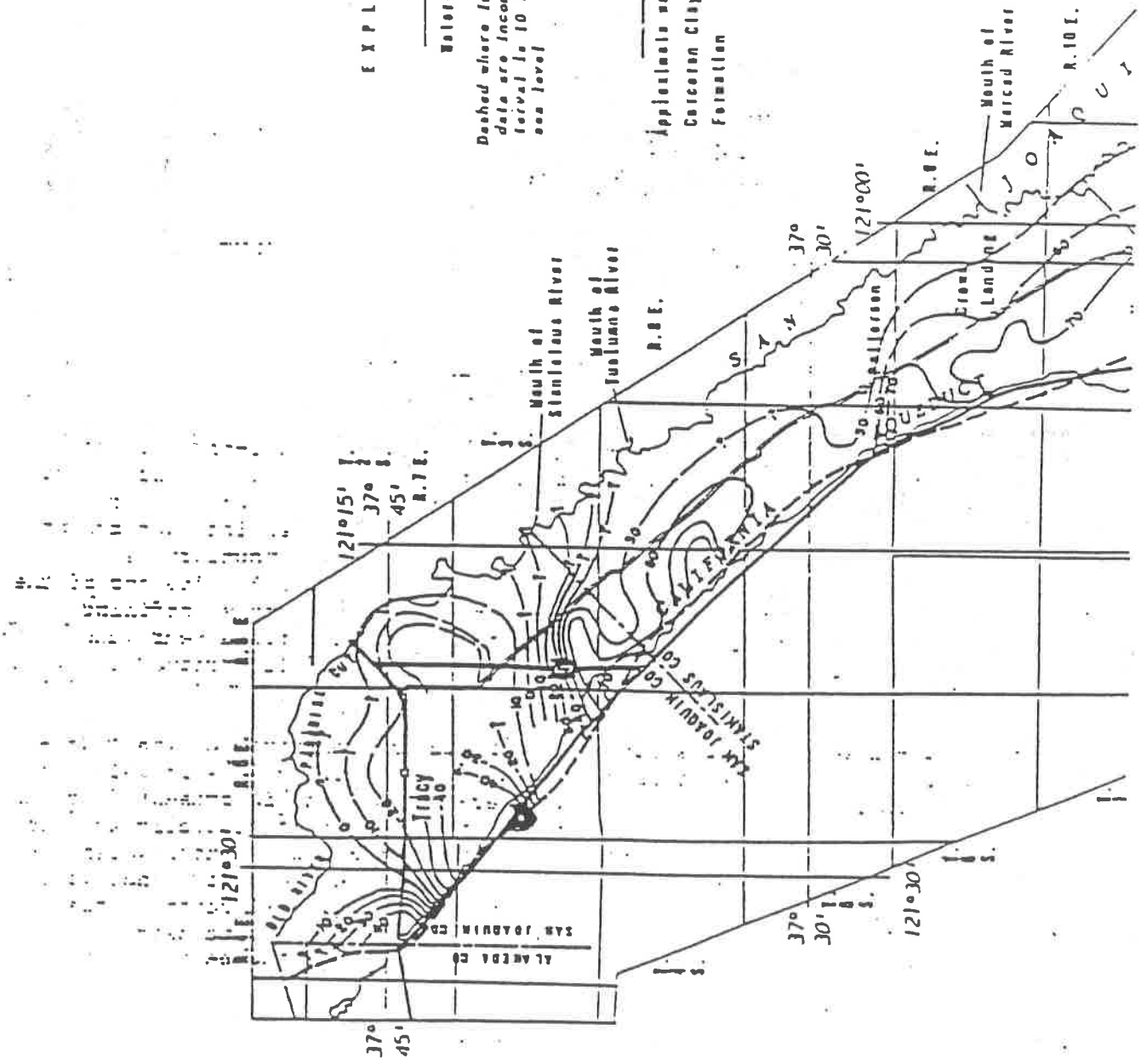
2 0 10 Miles

Vertical scale 104 times horizontal scale

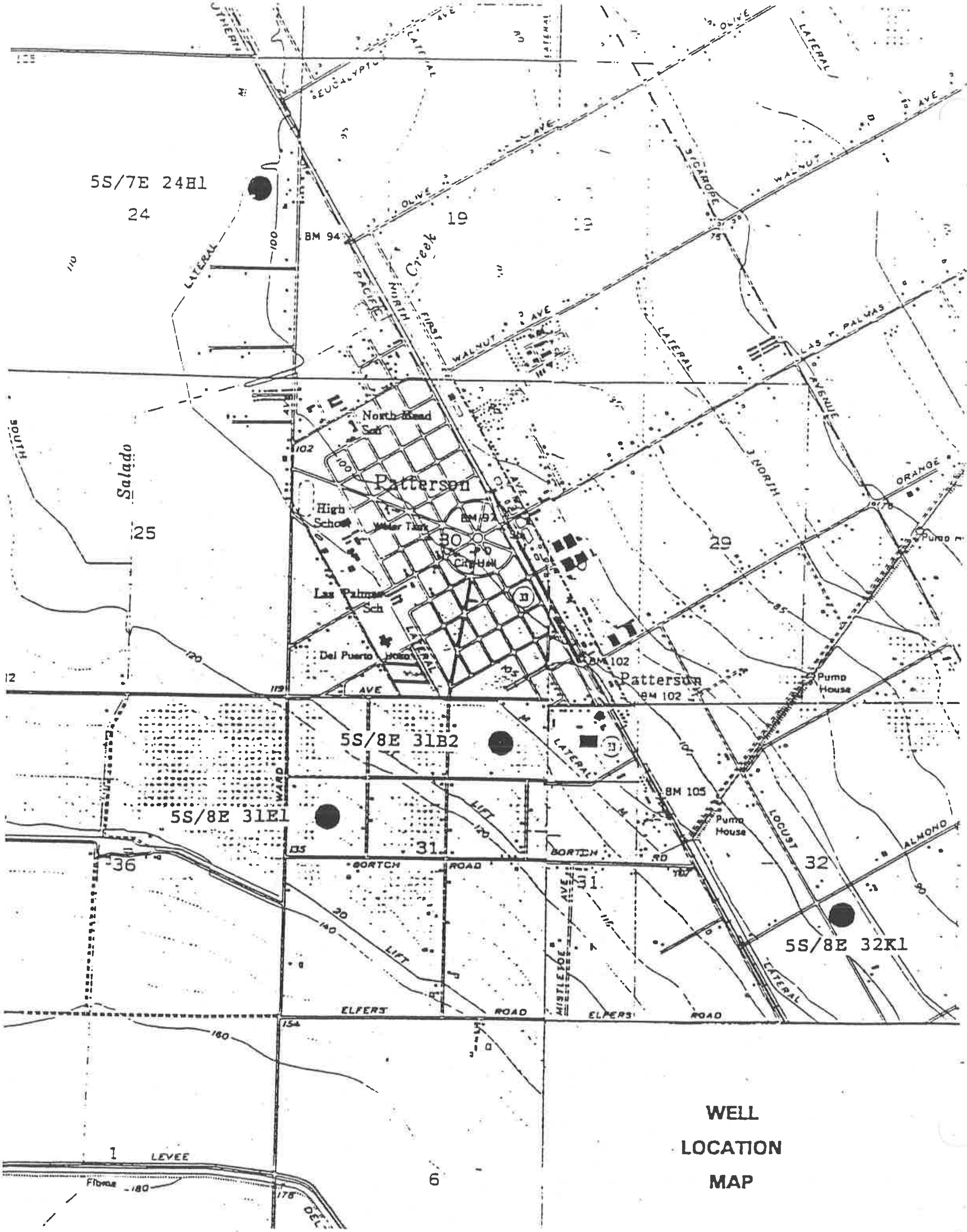
ATTACHMENT 2

Water level elevations in unconfined aquifer, Spring 1987
From California Department of Water Resources





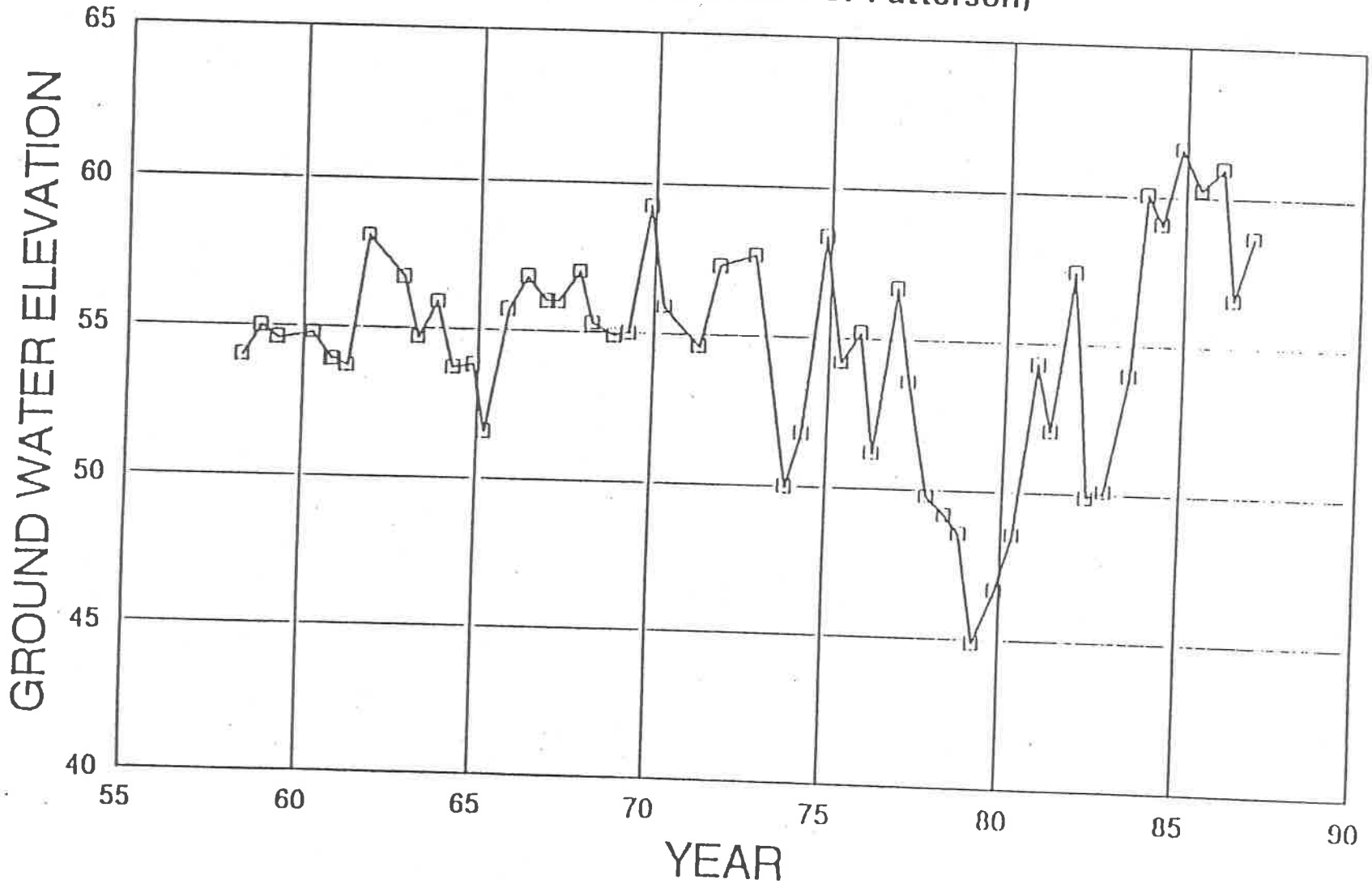
Source: USGS Open File Report "Geology, Hydrology and Water Quality of the Tracy-Dos Palos Area", 1971.



WELL LOCATION MAP

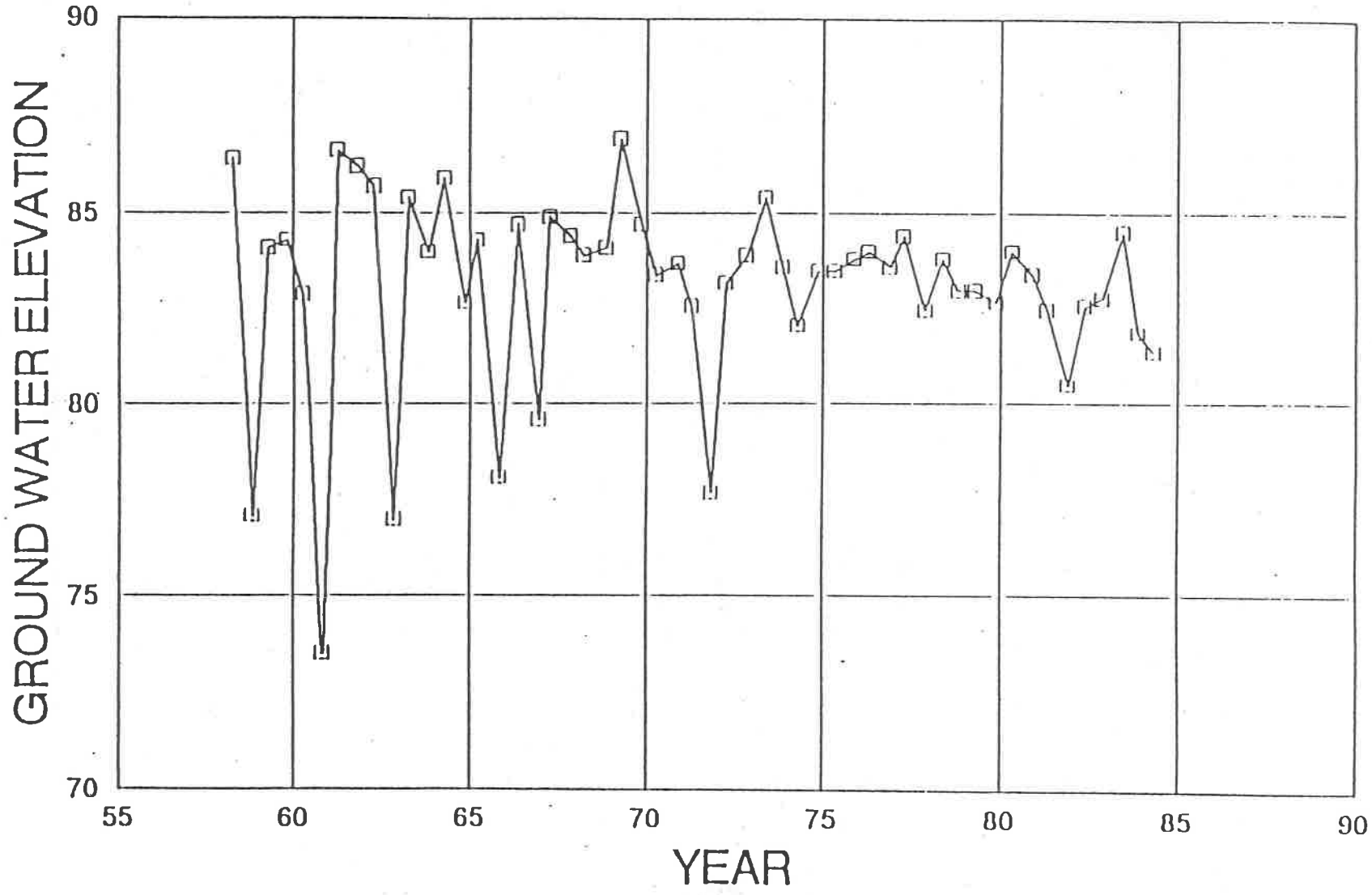
WATER LEVEL ELEVATION

5S/7E-24H1 (One Mile NW of Patterson)



WATER LEVEL ELEVATION

5S/32K1 (One Mile SE of Patterson)



WATER LEVEL ELEVATION

5S/8E-31B2 & 5S/8E-31E1 (One Mile South of Patterson)

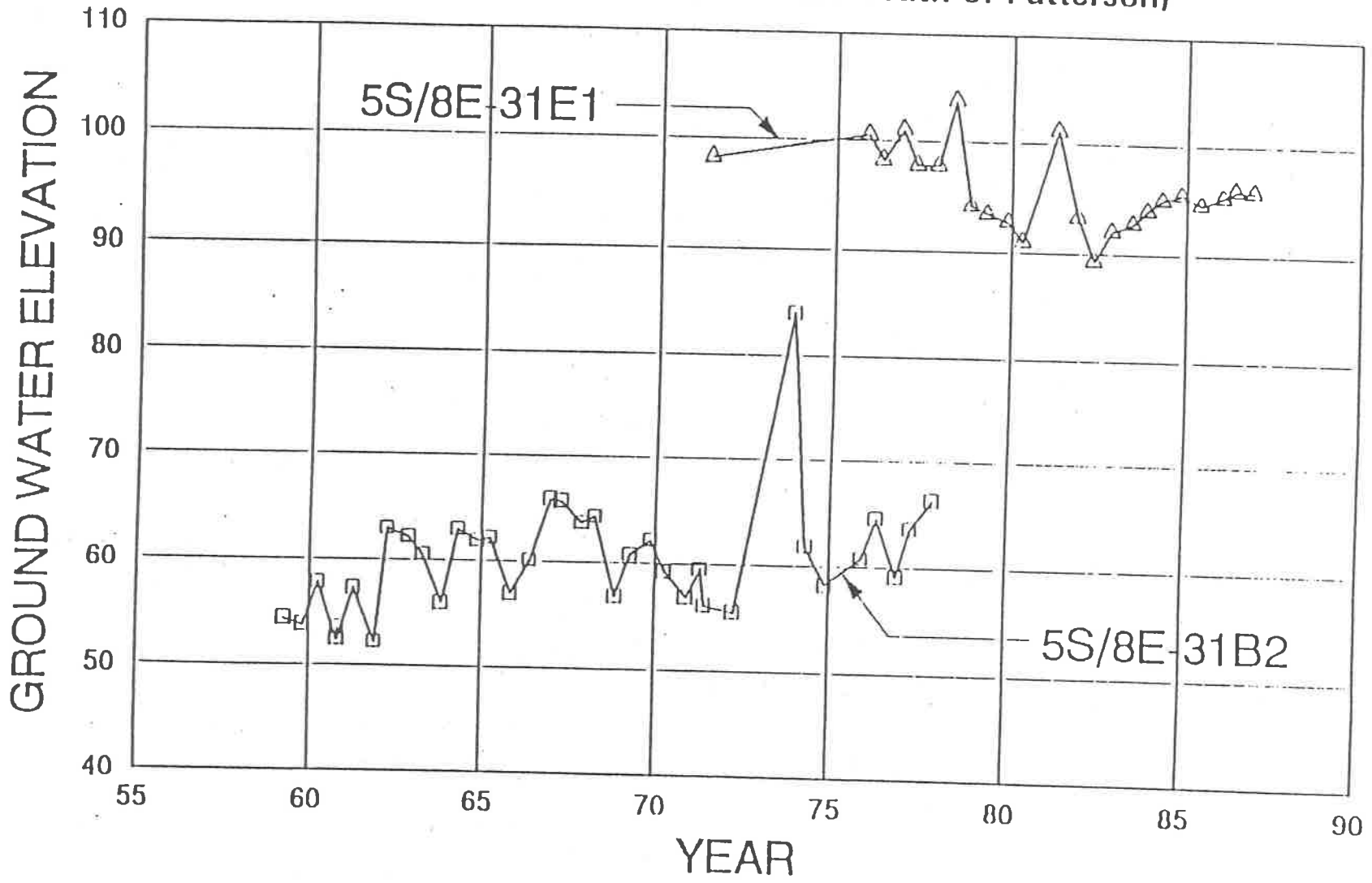


TABLE A7 (Continued)

SWAM PRELIMINARY DAU SURFACE WATER BUDGETS
(1000 acre-feet)

DAU 216

Item	Year 1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Supply													
Total Surface Diversions	1442.	1385.	1506.	1273.	1456.	1432.	1491.	967.	1041.	1374.	1341.	1487.	1297.
Total GW Pumpage	353.	366.	473.	362.	307.	419.	525.	705.	342.	258.	217.	590.	246.
Total Precip	477.	588.	243.	904.	575.	595.	328.	333.	961.	580.	685.	419.	848.
Minor Streams	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Total Supply	2272.	2340.	2222.	2540.	2338.	2446.	2344.	2005.	2345.	2213.	2243.	2495.	2392.
Demand													
Consumptive Use													
ET Dmnd from Appl Water (Crop)	879.	858.	987.	801.	862.	919.	1017.	911.	678.	796.	755.	1058.	754.
ET Dmnd from Precip (Crop)	263.	318.	137.	345.	323.	336.	187.	190.	389.	322.	377.	242.	466.
Mun & Ind	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
Wildlife	53.	53.	53.	53.	53.	53.	53.	53.	53.	53.	53.	53.	53.
Subtotal	1198.	1232.	1180.	1202.	1242.	1312.	1261.	1158.	1123.	1174.	1188.	1357.	1276.
Recharge to Ground Water													
Irrigation Percolation	301.	349.	488.	175.	284.	262.	375.	367.	280.	160.	206.	319.	246.
Excess Precip	3.	37.	0.	338.	2.	1.	0.	0.	345.	50.	66.	0.	77.
Minor Stream Seepage	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Mil Losses to GW	7.	7.	7.	7.	7.	7.	7.	7.	7.	7.	7.	7.	7.
Wildlife Losses to GW	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.	18.
DAU Conveyance Seepage	216.	208.	226.	191.	218.	215.	224.	145.	156.	206.	201.	223.	195.
Intentional Rech	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Subtotal	545.	618.	738.	729.	529.	503.	623.	537.	806.	441.	497.	567.	543.
Nonrecoverable Losses													
DAU Conveyance Evap	29.	28.	30.	25.	29.	29.	30.	19.	21.	27.	27.	30.	26.
ET Dmnd from Precip (Non-Crop)	212.	234.	107.	221.	250.	258.	141.	143.	228.	208.	242.	176.	305.
Exports and Spills	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Tailwater Export	289.	229.	167.	362.	288.	345.	289.	229.	167.	362.	288.	345.	242.
Head Ditch and Edge Losses	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Subtotal	529.	491.	304.	608.	568.	632.	460.	391.	416.	598.	557.	551.	573.
Total Demand	2272.	2340.	2222.	2540.	2338.	2446.	2344.	2085.	2345.	2213.	2243.	2495.	2392.

Source: "Fourth Progress Report - Ground Water Study, San Joaquin Valley", California Department of Water Resources, Septemer 1989

ATTACHMENT 7

I

MONITORING REPORT ON OPERATION OF MARSHALL & DAVIS WELL OF WESTERN HILLS WATER DISTRICT

OCTOBER 1997

PREPARED FOR

WESTERN HILLS WATER DISTRICT

PREPARED BY

BOOKMAN-EDMONSTON ENGINEERING

A DIVISION OF RESOURCE MANAGEMENT INTERNATIONAL, INC.

MONITORING REPORT ON OPERATION OF MARSHALL & DAVIS WELL OF WESTERN HILLS WATER DISTRICT

OCTOBER 1997

INTRODUCTION

This report has been prepared to comply with reporting requirements specified by the *Monitoring Plan for Operation of Marshall & Davis Well by Western Hills Water District*, as approved by Stanislaus County. Information is presented in the following sections:

- Marshall & Davis Well Operation
- Summary of Monitoring Data
- Evaluation of Monitoring Data

MARSHALL & DAVIS WELL OPERATIONS

The Marshall & Davis well pumped approximately 92 acre-feet of water during October 1997.

MONITORING DATA

Table 1 contains all water levels monitored to date, including water levels measured at the Marshall & Davis well and at the monitoring wells during October1997. These water levels are shown graphically in Figures 1 (Marshall & Davis well), 2 (Maring well), 3 (Vogel well), 4 (Perez well), and 5 (Escobar well).

Electrical conductivity and pH were measured at the Escobar well on September 9, and are shown in the October graphs and tables.

EVALUATION OF MONITORING DATA

Several evaluations are made using the monitoring data. Specifically, these evaluations are estimates of the "baseline" groundwater levels, evaluation if mitigation is potentially required due to water levels, and evaluation if mitigation is potentially required due to water quality. These evaluations are discussed below.

EVALUATION OF BASELINE GROUNDWATER LEVELS

Baseline depths to groundwater for the monitoring wells have been established by adding an approved well-specific seasonal variation to the minimum depth which occurred in the previous spring. Baseline groundwater elevations are computed as the reference point elevation minus the baseline depth to water. These computations are summarized in Table 3, and the baseline groundwater elevations are shown graphically as horizontal lines on Figures 2 (Maring well), 3 (Vogel well), 4 (Perez well), and 5 (Escobar well).

Baseline and mitigation threshold levels are adjusted annually. The highest groundwater elevations in 1997 were reached in late February and the adjusted baseline and mitigation threshold levels are shown for all 1997 sample dates. Figures 2 through 5 will annual adjusted

baseline and mitigation threshold levels. Note that previous reports showed only these levels for the most current year.

EVALUATION IF MITIGATION IS POTENTIALLY REQUIRED DUE TO WATER LEVELS

Mitigation is potentially required if the depth to water observed in a monitoring well exceeds the baseline depth by 10 percent. The depth to water for mitigation evaluation is presented in Table 3, as are the corresponding groundwater elevations. The mitigation groundwater elevations are shown graphically on Figures 2 (Maring well), 3 (Vogel well), 4 (Perez well), and 5 (Escobar well). As shown, the observed groundwater elevations at all of the monitoring wells are above the mitigation evaluation groundwater elevation; therefore, no further analysis is required.

EVALUATION IF MITIGATION IS POTENTIALLY REQUIRED DUE TO WATER QUALITY

Mitigation is potentially required if the electrical conductivity (EC) exceeds 3,000 mmhos, the standard for Class 2 under a water quality evaluation scheme of the Department of Water Resources.

Table1
Summary of Groundwater Elevations for Wells in Marshall & Davis Monitoring Plan

Marshall & Davis Well (1)			Western Water District Well (2)			Maring Well			Vogel Well			Perez Well			John Escobar Well		
Reference Elevation (3)		132	Reference Elevation (3)		132	Reference Elevation (3)		150	Reference Elevation (3)		200	Reference Elevation (3)		150	Reference Elevation (3)		130
Date	Water Levels		Date	Water Levels		Date	Water Levels		Date	Water Levels		Date	Water Levels		Date	Water Levels	
	Elevation (ft)	Depth (ft)		Elevation (ft)	Depth (ft)		Elevation (ft)	Depth (ft)		Elevation (ft)	Depth (ft)		Elevation (ft)	Depth (ft)		Elevation (ft)	Depth (ft)
12/31/94			12/31/94			12/31/94			12/31/94			12/31/94			12/31/94		
03/06/95			03/06/95			03/06/95	76.0	74.0	03/06/95	76.7	123.3	03/06/95	52.7	97.3	03/24/95	70.0	60.0
05/08/95			05/08/95	87.0	45.0	05/08/95	71.5	78.5	05/08/95	77.0	123.0	05/08/95	45.0	105.0	05/08/95	60.0	70.0
06/01/95			06/01/95	87.2	44.8	06/04/95	70.3	79.8	06/01/95	77.2	122.8	06/01/95	44.9	105.1	06/04/95	60.0	70.0
06/29/95			06/29/95	87.3	44.7	06/29/95	69.5	80.5	06/29/95	77.3	122.7	07/08/95	37.7	112.3	06/29/95	59.0	71.0
08/04/95			08/04/95	88.0	44.0	08/04/95	68.0	82.0	08/04/95	75.3	124.7	08/07/95	39.7	110.3	08/07/95	53.8	76.2
09/06/95			09/06/95	87.8	44.3	09/06/95	66.4	83.6	09/06/95	75.7	124.3	09/10/95	38.3	111.7	09/10/95	55.3	74.8
10/02/95			10/02/95	87.6	44.4	10/02/95	70.5	79.5	10/02/95	75.0	125.0	10/02/95	45.8	104.3	10/02/95	65.0	65.0
11/15/95			11/15/95	88.5	43.5	11/15/95	74.4	75.6	11/15/95	79.3	120.8	11/15/95	51.8	98.3	11/15/95	68.2	61.8
12/08/95			12/08/95	88.8	43.2	12/08/95	76.5	73.5	12/08/95	80.3	119.7	12/08/95	53.8	96.3	12/08/95	68.7	61.3
01/10/96			01/10/96	89.3	42.8	01/10/96	78.0	72.0	01/10/96	80.6	119.4	01/10/96	55.3	94.7	01/10/96	66.2	63.8
02/13/96			02/13/96	89.8	42.3	02/13/96	77.3	72.8	02/13/96	80.8	119.3	02/13/96	57.0	93.0	02/13/96	68.5	61.5
03/17/96			03/17/96	89.3	42.8	03/17/96	76.4	73.6	03/17/96	81.3	118.8	03/17/96	58.9	91.1	03/17/96	69.7	60.3
04/10/96			04/10/96	89.0	43.0	04/10/96	74.8	75.2	04/10/96	81.8	118.3	04/10/96	58.8	91.3	04/10/96	69.3	60.7
04/29/96			04/29/96	86.8	45.3	05/01/96	66.1	83.9	05/01/96	81.7	118.3	05/01/96	46.2	103.8	05/01/96	66.4	63.6
06/25/96 (4)	-46.0	178.0	06/25/96	85.6	46.4	06/25/96	62.2	87.8	06/25/96	81.6	118.4	06/25/96	46.4	103.6	06/25/96	53.3	76.8
07/14/96 (4)	-50.0	182.0	07/14/96	86.8	45.2	07/14/96	62.7	87.3	07/14/96	81.8	118.3	07/14/96	45.2	104.8	07/14/96	52.5	77.5
08/08/96 (4)	-42.0	174.0	08/08/96	86.1	45.9	08/08/96	63.3	86.8	08/08/96	82.4	117.8	08/08/96	44.8	105.2	08/07/96	52.3	77.7
09/09/96			09/09/96	88.0	44.0	09/09/96	71.1	78.9	09/09/96	76.8	123.2	09/09/96	43.3	106.8	09/09/96	63.3	66.7
10/24/96			10/24/96	88.8	43.3	10/24/96	68.8	81.2	10/24/96	81.8	118.2	10/24/96	47.4	102.6	10/24/96	62.5	67.5
11/27/96	50.0	82.0	11/27/96	89.2	42.8	11/27/96	72.7	77.3	11/27/96	81.6	118.4	11/27/96	50.3	99.8	11/27/96	65.4	64.6
12/19/96	59.2	72.8	12/19/96	89.3	42.7	12/19/96	73.5	76.5	12/19/96	85.0	115.0	12/19/96	52.1	97.9	12/19/96	69.5	60.5
01/22/97	58.6	73.4	01/22/97	89.3	42.7	01/22/97	79.0	71.0	01/22/97	89.4	110.6	01/22/97	58.3	91.8	01/22/97	70.0	60.0
02/10/97	60.8	71.3	02/10/97	89.6	42.4	02/10/97	80.3	69.7	02/10/97	91.0	109.0	02/10/97	60.0	90.0	02/10/97	75.0	55.0
03/31/97	51.8	80.2	03/31/97	92.0	40.0	03/31/97	77.7	72.3	03/31/97	85.3	114.7	03/31/97	55.8	94.3	03/31/97	65.0	65.0
04/28/97	42.2	89.8	04/28/97	90.3	41.7	04/28/97	76.6	73.4	04/28/97	84.5	115.5	04/28/97	53.8	96.2	04/28/97	61.0	69.0
05/16/97	39.4	92.8	05/16/97	89.7	42.3	05/16/97	71.3	78.7	05/16/97	84.3	115.8	05/16/97	52.7	97.3	05/16/97	60.0	70.0
07/19/97 (5)	6.4	125.8	07/19/97	82.9	49.1	07/19/97	67.6	82.4	07/19/97	82.8	117.3	07/20/97	47.5	102.5	07/20/97	55.0	75.0
08/29/97	33.7	98.3	08/29/97	89.0	43.0	08/29/97	67.8	82.2	08/29/97	80.0	120.0	08/29/97	49.6	100.4	08/29/97	57.0	73.0
09/27/97	54.0	78.0	09/27/97	89.6	42.4	09/27/97	70.5	79.5	09/27/97	81.5	118.5	09/27/97	51.8	98.2	09/27/97	60.0	70.0
10/27/97	58.0	74.0	10/27/97	90.3	41.7	10/27/97	71.7	78.3	10/27/97	82.7	117.3	10/27/97	51.4	98.6	10/27/97	65.0	65.0

(1) The well pumped by WHWD. Monitoring of this well began on 6/25/96.
(2) Prior to June 1996 Report, this well was incorrectly identified as the Marshall & Davis well.
(3) Ground elevation obtained from USGS topographic maps. All elevations in feet above mean sea level.
(4) Measurements prior to 11/27/96 were in error due to a faulty transducer in the water level gage and are not shown on Figure 1.
(5) No June water level measurements because of instrumentation repairs.

Table 2
Summary of Water Quality Data for Wells in Marshall & Davis Monitoring Plan (1)

Marshall & Davis Well			Western Water District Well (1)			Maring Well			Vogel Well (1)			Perez Well			John Escobar Well		
Date	EC (mmohs)	pH	Date	EC (mmohs)	pH	Date	EC (mmohs)	pH	Date	EC (mmohs)	pH	Date	EC (mmohs)	pH	Date	EC (mmohs)	pH
05/09/97 (2)	2,210	7.9				05/09/97 (2)	2,315	8.1				05/09/97 (2)	2,195	7.8			
05/22/97	1,430	8.0				05/24/97	1,465	8.1				05/27/97	1,420	8.0	05/29/97	1,550	8.2
08/29/97	1,455	8.0				09/01/97	1,470	8.1				09/05/97	1,450	8.1	09/09/97	1485.0	8.1

(1) No samples taken to date. Well is not currently operated.
(2) Sample may have been taken prior to flushing of well casing volume. Electrical conductivity taken on this data is not shown on the Figures.

Figure 1
Monitoring Data for Marshall & Davis Well

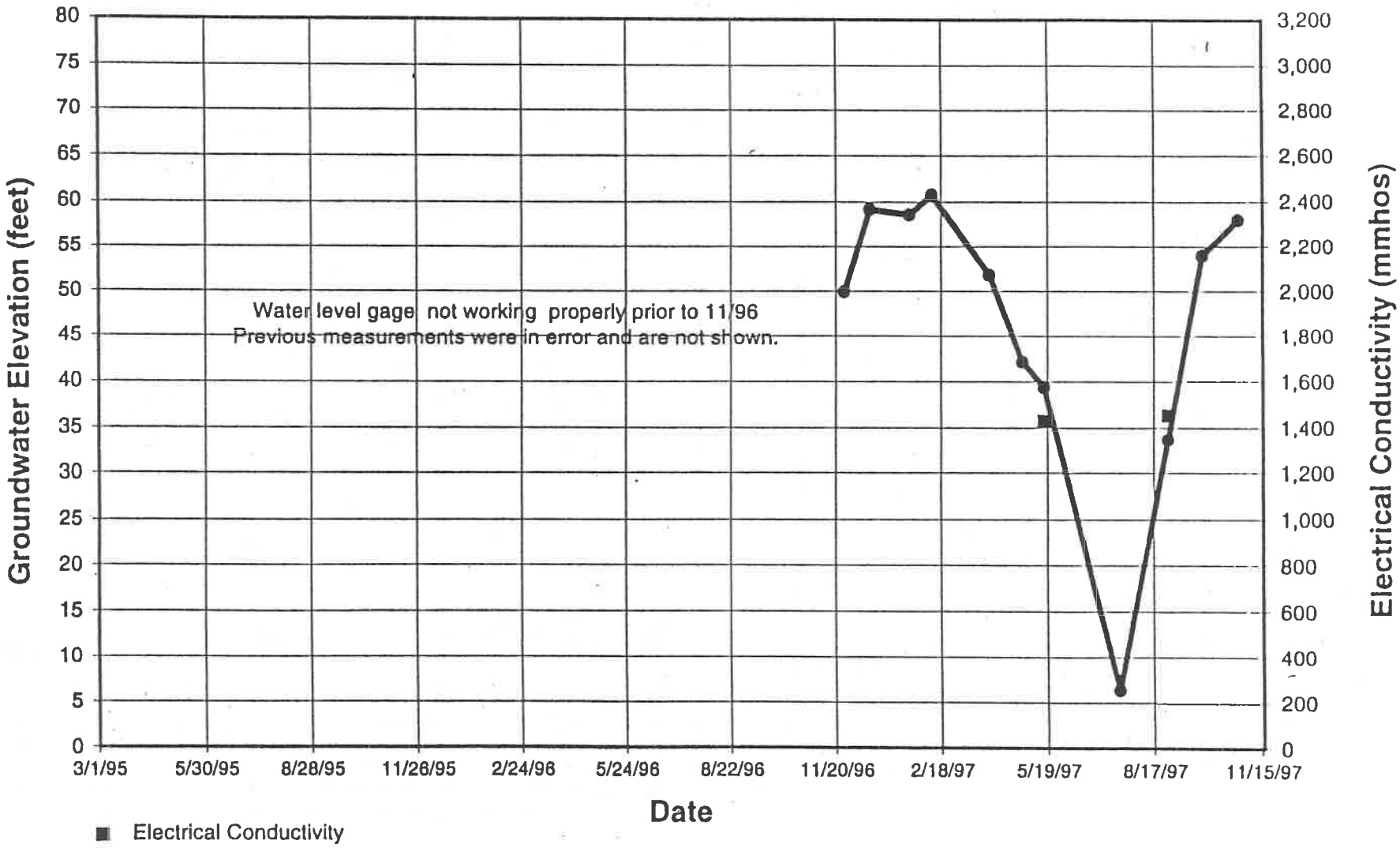


Figure 2
Monitoring Data for Vogel Well

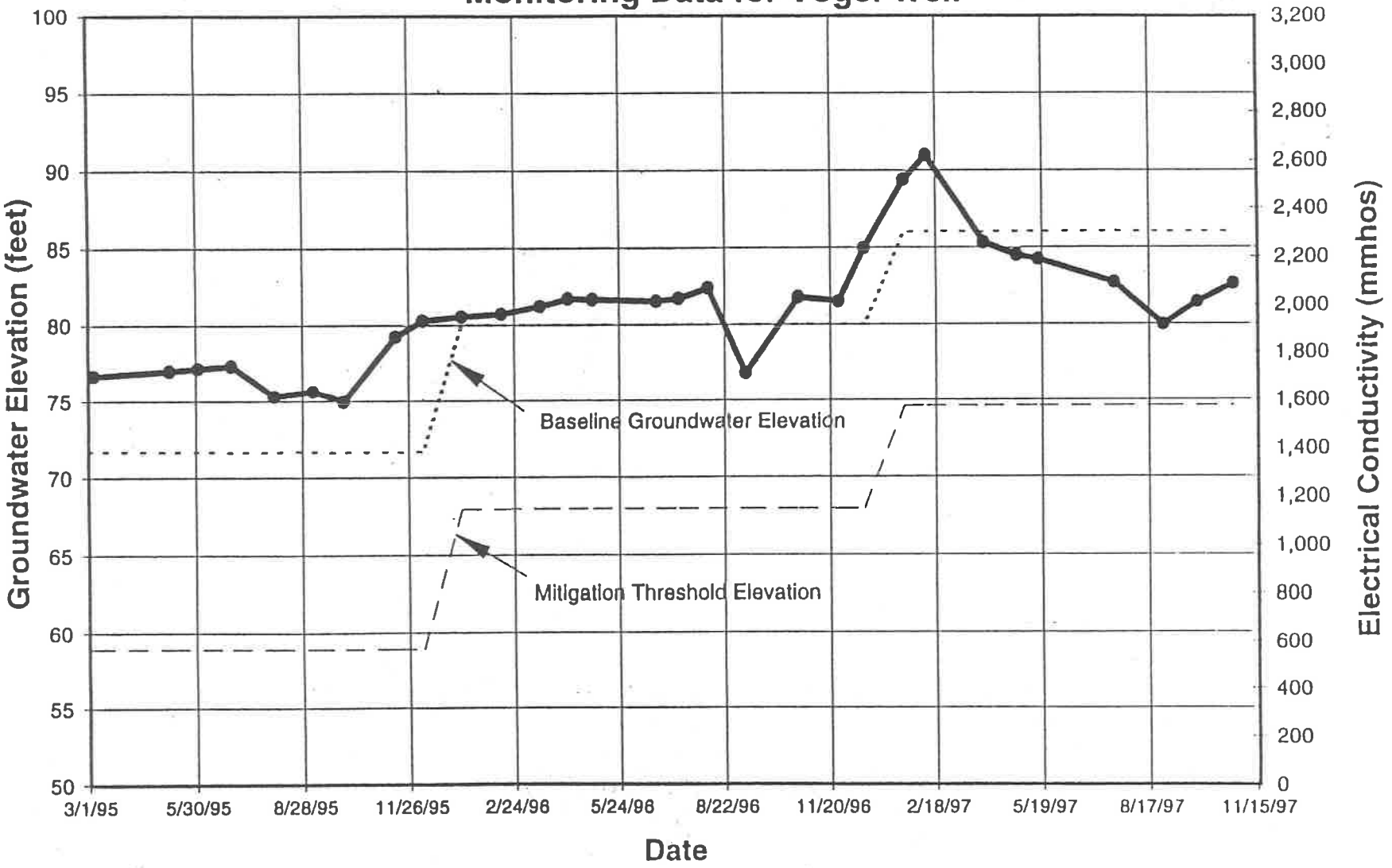


Figure 3
Monitoring Data for Maring Well

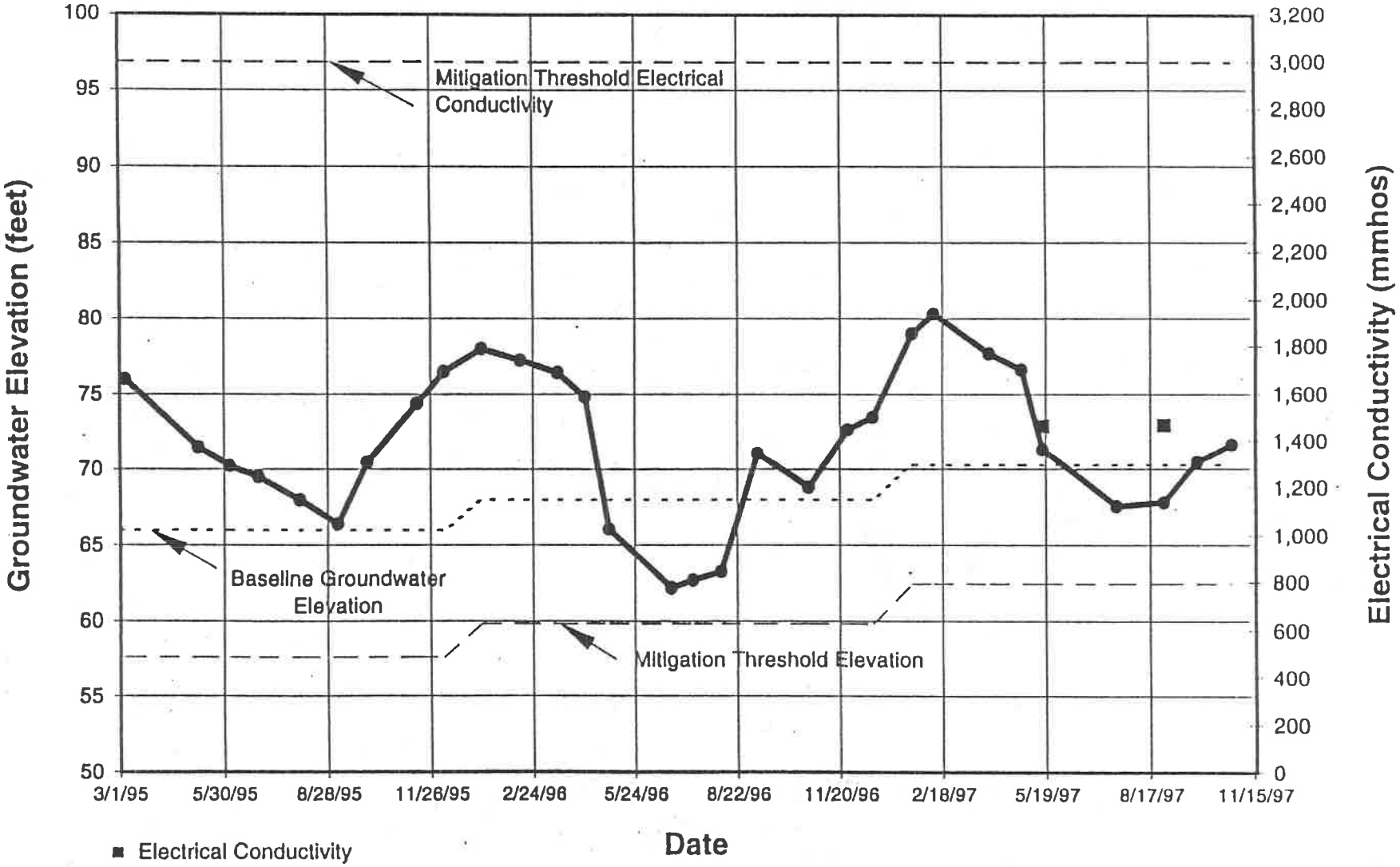


Figure 4
Monitoring Data for Perez Well

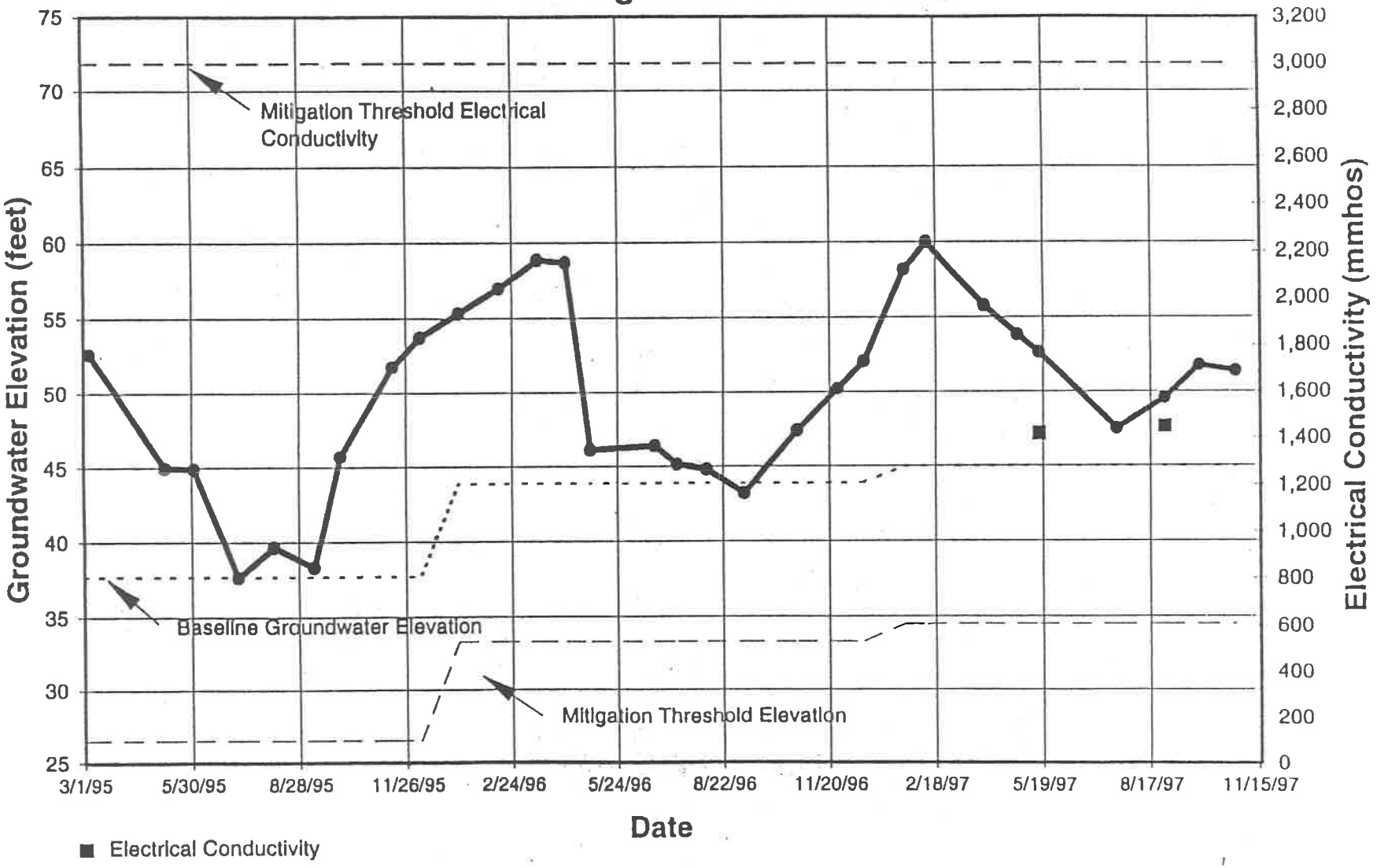


Figure 5
Monitoring Data for Escobar Well

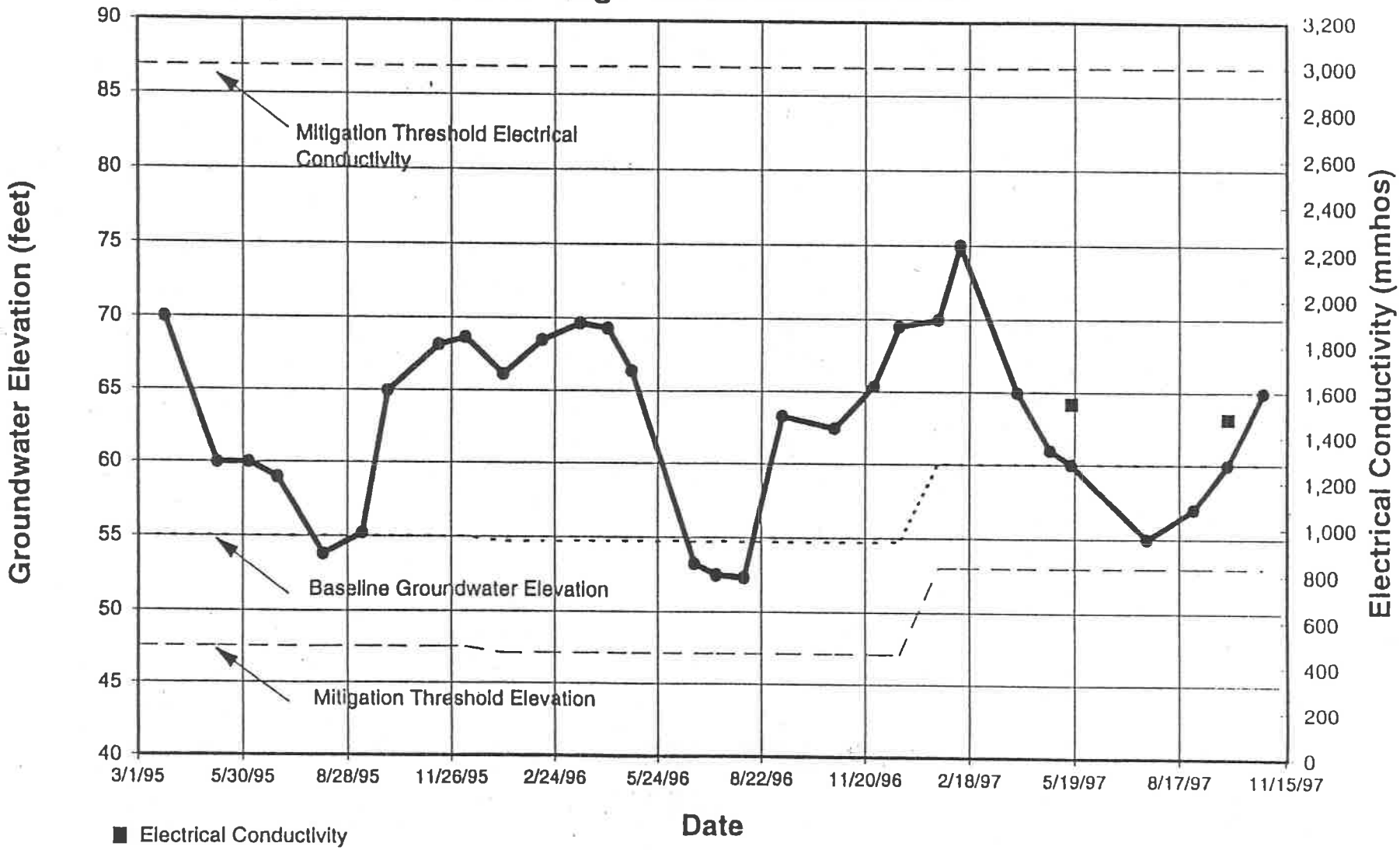
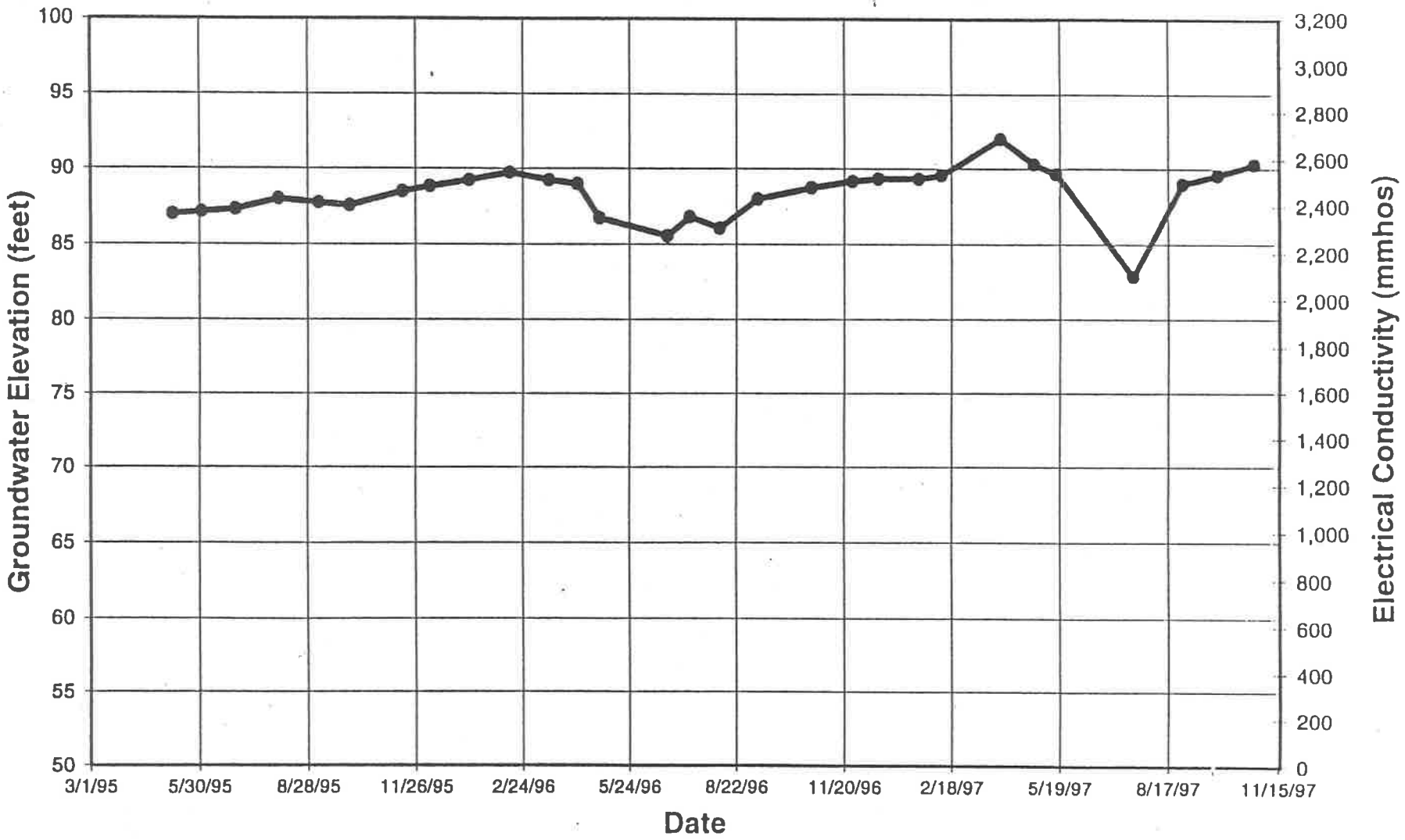


Figure 6
Monitoring Data for Western Hills Water District Well



Appendix E

Excerpts from Monterey Agreement EIR

DRAFT
ENVIRONMENTAL IMPACT REPORT

Implementation of the

MONTEREY AGREEMENT

Statement of Principles by the
State Water Contractors
and the State of California,
Department of Water Resources
for Potential Amendments to the
State Water Supply Contracts

SCH No. 95023035

May 1995

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December 1, 1994

THE MONTEREY AGREEMENT -- STATEMENT OF PRINCIPLES

by the

STATE WATER CONTRACTORS

and the

STATE OF CALIFORNIA, DEPARTMENT OF WATER RESOURCES

FOR POTENTIAL AMENDMENTS TO THE STATE WATER SUPPLY CONTRACTS

INTRODUCTION

State Water Project ("SWP") shortages in recent years have prompted both Agricultural Contractors ("Ag Contractors"), and Municipal and Industrial Contractors ("Urban Contractors"), (collectively, the "Contractors") to consider amendments to their water supply contracts with the State of California, Department of Water Resources ("DWR"). Some of the Contractors have considered litigation to resolve differences over water allocations. To avoid litigation, and to make the SWP operate more effectively for all Contractors, the parties, including DWR, have engaged in mediated negotiations toward a settlement of their disputes.

This document contains an agreed Statement of Principles that is the foundation for an agreement among the Contractors and DWR that will settle their disputes over water allocations and certain operational aspects of the SWP. The undersigned negotiators pledge their good faith efforts to work diligently toward a final written agreement. The Contractor negotiators further pledge to obtain ratification of these Principles by their respective Contractor groups and the Boards of Directors that they individually represent.

STATEMENT OF PRINCIPLES

A written agreement with contract amendments and other implementing documents will contain provisions in accord with the following principles:

1. **Water allocations.** The SWP contracts shall be amended to provide that all future allocations of project water from existing project facilities are to be based on entitlements.

2. **Water allocations when requests exceed available supply.**

a. The water contracts will be amended to provide that each Contractor will be allocated the portion of total available project water supply equivalent to the ratio of its annual entitlement irrespective of type of use, as identified in its Table A, to the total annual entitlements of all Contractors as identified in Table A. If a Contractor declines allocated water, such water will be allocated in the same manner among other Contractors. The Contracts will further provide that the only permitted exceptions to this requirement are those necessary to comply with (i) a valid order of a court or the state water resources control board, or (ii) a valid declaration of emergency by the Governor pursuant to the Emergency Services Act in order to meet minimum demands for domestic supply, fire protection, or sanitation during the year.

b. Article 18(b) through the end of subparagraph (1) will be deleted.

3. **Kern Water Bank.** The Kern Fan Element property and related assets of the Kern Water Bank will be sold or leased on a long-term basis by DWR to designated Ag Contractors. In exchange, 45,000 acre-feet of Ag water entitlements will be transferred to DWR and retired. All fixed conservation and transportation charges for the transferred and retired entitlements will be added to the Contractors' Delta Water Charges. Subject to the approval of designated Ag Contractors, Urban Contractors may be provided access to and use of Kern Fan Element property and related assets of the Kern Water Bank for water storage.

Any project water remaining in the Kern Water Bank at the time of transfer of the property will split 50% to the project and 50% to be transferred with the property. The schedule and costs of delivery will be addressed in the implementation documents.

4. **Permanent Sales of Entitlement.**

a. **Ag-to-Urban entitlement transfers.**

i. Ag Contractors will make available for permanent transfer to Urban Contractors on a willing buyer-willing seller basis 130,000 acre-feet of annual entitlements, with Kern County Water Agency ("KCWA") being responsible for any portion of this amount not made available by other Ag Contractors. This provision will apply only to those transfer contracts executed prior to January 1,

2011.

ii. Ag Contractors and DWR will expeditiously approve such sales. As a condition of KCWA's approval of sales from within its service area, KCWA shall be entitled to receive a percentage of the gross sales price determined by that portion of the total SWP costs paid by KCWA's Zones of Benefit or other KCWA resources.

iii. KCWA member units shall have 90 days to exercise a right of first refusal to purchase any entitlement being offered to Urban Contractors by agreeing to pay the same price offered by the Urban purchaser. Such sales to KCWA member units will not diminish the 130,000 acre-foot obligation of KCWA.

b. **Ag-to-Non-Contractor transfers.** Any permanent transfers of entitlement by Ag Contractors to parties who are not Urban Contractors, including transfers to KCWA urban member units or to KCWA's Improvement District No. 4, will be considered a part of the 130,000 acre-feet to be made available to Urban Contractors pursuant to subsection (a), above, provided that Urban Contractors have been allowed 90 days to exercise a right of first refusal to purchase such entitlement at the price being offered by the prospective purchaser without conditions.

c. **Other Water transfers.** DWR will expeditiously approve permanent sales of entitlements among Contractors, including between Urban Contractors.

5. **Restructuring to ensure financial integrity of the SWP.** The SWP Contractors and DWR will develop financial programs involving funds related to State Water Project operations and payment of debt service on bonds to (i) bring the obligations of the parties into line with current market and regulatory circumstances facing the SWP, DWR and the Contractors; (ii) ensure the continuing financial viability of the SWP and improve security for bondholders; and (iii) provide for more efficient use of project water and facilities. These programs shall include:

a. In 1995, DWR will establish a general capital operating fund of $15 million to be made available from bond reserves that are no longer required by bond covenants.

b. It is expected that new capital projects will be financed with revenue bonds, consistent with past practice. The definition of Water System Facilities in the Water Supply Contracts will be expanded to include a State Water Project Corporation Yard and a Project Operation Center and to allow DWR to finance these facilities with water system revenue bonds if DWR decides to build them. These facilities are estimated to cost $35 million and $45 million, respectively, in 1995 dollars. DWR will fully consult with the Contractors prior to issuing each series of water system revenue bonds for defined project facilities.

c. When DWR pays off its obligation to the California Water Fund in 1997, additional moneys that become available will be dedicated to rate payment and other programs for Contractors. In 1997, $14 million will be available for these purposes and will be applied as follows: $10 million will be placed into a separate DWR trust fund ("Trust Fund") for stablizing payments for Ag Contractors, and $4 million will be distributed directly to Urban Contractors, as directed by the Urban Contractors for their management.

d. In 1998, $7.7 million will be placed in the DWR capital operating fund, bringing the balance to $22.7 million. An additional $17 million will be used as follows: $10 million will be placed in the Trust Fund, and $7 million will be distributed to Urban Contractors, as they direct.

e. In 1999, $32 million in additional funds will be used as follows: $10 million will be placed in the Trust Fund and $22 million will be distributed to Urban Contractors, as they direct.

f. In 2000, funds will be used as follows: $10 million will be placed in the Trust Fund and $23 million will be distributed to Urban Contractors, as they direct.

g. In 2001 when funds available exceed $40.5 million, $10 million will be placed in the Trust Fund, and $30.5 million will be distributed to Urban Contractors, as they direct. The Director of DWR, in consultation with Contractors, will review the financial requirements of the SWP to determine if the amounts over $40.5 million should be retained or whether such amounts can be applied to the Trust Fund and Urban Contractor disbursements on a 24.7%-75.3% basis, respectively. If amounts in excess of $40.5 million are not retained by DWR, up to the first $2 million will be disbursed to Urban Contractors, then the remaining amounts, if any, in excess of $40.5 million will be applied to the Trust Fund and Urban Contractor disbursements on a 24.7%-75.3% basis respectively. Urban Contractors will receive up to the first $2 million in excess of $40.5 million every year until it has received a total of $19.3 million, then all amounts in excess of $40.5 million will be split between the Trust Fund and Urban Contractor disbursements on a 24.7%-75.3% basis. The Director of DWR and the Contractors will review this arrangement every five years after the initial review.

h. The numbers and percentages in this Principle reflect certain estimates of dollars and sharing of revenue. The actual numbers may vary slightly from the numbers described above. These calculations shall be completed before and used in the implementing documents.

i. The attached Exhibit A worksheet illustrates the estimated amounts and use of funds described above.

j. Approval of these Principles is subject to the satisfactory resolution of issues relating

to the allocation of Urban refunds among Urban Contractors.

6. **Terminal Reservoirs - Points of Delivery.**

DWR commits to develop, in cooperation with Contractors participating in repayment of the costs of Perris and Castaic Reservoirs, ways to utilize the respective capacities and stored water to increase the reservoirs' potentials for more effective utilization in conjunction with local water supply facilities. As part of this process, DWR will analyze the impacts on the contractors and on SWP operations. Subject to terms and conditions to be negotiated, Contractors participating in repayment of the costs of these terminal reservoirs will be provided the opportunity to directly utilize the respective capacities in order to optimize the operation of both local and SWP facilities.

Access to such capacity will be provided in a manner designed to ensure that any resulting changes in flow regimes into the reservoirs do not cause a significant adverse effect upon the manner in which these reservoirs were designed to function pursuant to the state water contracts and statutory requirements. The objective of this process is to provide additional flexibility and water management benefits to participating contractors consistent with the usage of such reservoirs as transportation facilities in the overall SWP operations.

DWR will attempt to work out similar arrangements for Del Valle Reservoir.

7. **Interruptible Water Service Program.**

a. Present Surplus (including unscheduled), Wet Weather and 12(d) water will be replaced by Interruptible water service. Whenever DWR has project water available for delivery to Contractors that is not needed for fulfilling entitlement delivery requests or meeting the project operational commitments, including storage goals for the current or following years, DWR will offer such water to Contractors in proportion to their annual entitlements for that year and Contractors taking such water will pay to DWR the Melded Power Rate for power costs incurred by DWR for such service.

b. Implementation would be in substantial conformance with the attached Exhibit B entitled "Possible Implementation of an Interruptible Water Service Program" dated December 1, 1994.

8. **Non-project water transport.** Contractors shall have the right to transport non-project water in project facilities. Power charges for non-project water delivered to Contractors shall be the same as for project water. Priority for conveyance of non-project water shall be as set forth in Principle 7.

9. **Water storage outside service area.**

a. Water stored outside a Contractor's service area is reserved exclusively for use in the

storer's service area. Such water cannot be sold.

b. "Storer" vs. "seller" alternative tracks: in any water year, a Contractor may elect to be a storer or seller, but not both.

i. Storing Contractors will not be allocated water beyond their total demand, including storage.

c. Existing carryover rules under Article 12(e) will be maintained. If a Contractor uses Article 12(e), the Contractor cannot sell water in the next year pursuant to Principle 10. If a Contractor follows the storage track, the Contractor cannot sell water, pursuant to Principle 10, in the year in which it adds to storage. The timing of the election will be determined during implementation.

d. There will be no limits on the amount of ground water storage outside a Contractor's service area in an existing and operational ground water storage program. Contractors will cooperate to develop or establish ground water storage programs.

e. The annual water supply allowed to be stored in current SWP surface conservation facilities and non-SWP surface water storage facilities located outside a Contractor's service area shall be limited, per Contractor, as follows: A floor of 25% of annual Table A entitlement, not to exceed 100,000 acre-feet/year in any year in which DWR can meet less than 50% of requests. In any year in which DWR can meet 75% or more of requests, a maximum of 50% of annual Table A entitlement, not to exceed 200,000 acre-feet/year. There will be a sliding scale between 50% and 75% of requests from the floor to the maximum on a straight-line basis. In a year when DWR can meet 100% of requests, there will be no limit on surface water storage in non-project facilities. Storage capacity will be allocated on the basis of entitlements.

f. The storage constraints in Principle 9e shall not apply to any new South-of-Delta off-stream storage facilities involving SWP Contractor(s).

g. Bona fide exchanges (as distinguished from sales) will be defined during implementation.

h. Carryover water in project surface water conservation facilities is subject to "spill" in the following priority:

i. water stored for non-SWP Contractor;
ii. water stored for a SWP Contractor above its proportional share of available storage capacity based on Table A annual entitlement;
iii. water stored for a SWP Contractor within its proportional share of available storage capacity based on Table A annual entitlement.
iv. project water.

Determination of the allocation of spill will be made during implementation.

10. **Turn-back water pool sales.** There will be a turn-back water pool sales mechanism. For Contractors following the "seller" track, allocations of entitlement water not required by a Contractor will be sold according to the following priorities:

a. Contractors will be encouraged to amend downward their Table A build-up schedule consistent with their actual needs. All Contractors will cooperate in such amendments, and DWR will process amendments expeditiously.

b. An annual entitlement water pool will be formed by DWR for willing SWP sellers and buyers and priced as follows.

i. For water offered on or before:

February 15 – the seller will receive 50% of Delta Rate for water sold;

March 15 -- the seller will receive 25% of Delta Rate for water sold.

c. On the dates above, SWP Contractors will have first priority to purchase the water. If water is not sold by March 1, an offering Contractor can cancel its offer by March 1 or it will be considered re-offered on March 15.

d. On the dates above, water offered but not sold to other Contractors may be purchased by DWR at the same price as in item a, above, for the purpose of providing additional carryover storage for the SWP Contractors. DWR will consult with Contractors regarding such purchases.

e. In the March 15 market, water offered but not sold under the first two priorities may be offered to non-Contractors at market price, subject to a right of first refusal for SWP Contractors.

f. Sellers must elect to either store or sell. Sellers will not be permitted to store pursuant to Principle 10 during any year in which they have elected to sell water, except that under the short term provisions of Art. 12(e) they can carryover water during the last three months of the year, but cannot elect to sell in the subsequent year.

11. **Conforming contract amendments.** SWP contracts will be amended as appropriate to conform to this Statement of Principles.

12. **Project improvements.** DWR reaffirms its obligation under Article 6(c) of the water supply contracts, subject to the availability of funds, to make all reasonable efforts consistent with sound fiscal policies and proper operating procedures to complete the project facilities and other water management programs necessary for delivery of project water to the Contractors in

the total amounts designated in each contract's Table A.

13. **Integrated package.** Contractors will participate in all of the provisions of these Principles or none. A Contractor who chooses not to participate shall receive none of the benefits provided in these Principles.

14. **No precedent.** If the parties do not enter into the amendments, the parties agree not to utilize this document in any court proceedings relating to matters addressed in this agreement.

IMPLEMENTATION

The Contractors agree to expeditiously obtain preliminary determinations from their respective Boards of Directors as to whether this Statement of Principles is acceptable. The parties set March 31, 1995, as the goal for reaching final agreement.

Nothing in this Statement of Principles is intended to be, nor shall it be interpreted as, a waiver by any party of its rights in law or equity.

Executed this 1st day of December, 1994:

Kern County Water Agency

by _____

General Manager

Department of Water Resources

by _____

Director

Tulare Lake Basin Water Storage District

by _____

Member, Board of Directors

Coachella Valley Water District

by _____

General Manager

Metropolitan Water District of Southern California

by _____

General Manager

Central Coast Water Authority

by _____

General Counsel

Solano County Water Agency

by _____

General Manager

EXHIBIT A

STATE WATER PROJECT
PAYMENT MANAGEMENT PROGRAM

(Millions of Dollars)

			Contractor Payment Management Program		
	(1)	(2)	(4)	(5)	(6)
	[1] Revenue	SWP [2] Capital Resources	Funds Available Col 1-2	Ag Contractors 24.7%	Urban Contractors 75.3%
1995	0.0	0.0	0.0	0.0	0.0
1996	0.0	0.0	0.0	0.0	0.0
1997	14.0	0.0	14.0	10.0	4.0
1998	23.0	6.0	17.0	10.0	7.0
1999	38.0	6.0	32.0	10.0	22.0
2000	39.0	6.0	33.0	10.0	23.0
	Consultation with DWR and SWC's to discuss use of funds above $40.5 million				
2001	45.0	4.5	40.5	10.0	30.5
2002	45.0	4.5	40.5	10.0	30.5
2003	45.0	4.5	40.5	10.0	30.5
2004	45.0	4.5	40.5	10.0	30.5
2005	44.0	3.5	40.5	10.0	30.5
2006	44.0	3.5	40.5	10.0	30.5
2007	45.0	4.5	40.5	10.0	30.5
2008	45.0	4.5	40.5	10.0	30.5
2009	44.0	3.5	40.5	10.0	30.5
2010	45.0	4.5	40.5	10.0	30.5
2011	47.0	6.5	40.5	10.0	30.5
2012	49.0	8.5	40.5	10.0	30.5
2013	48.0	7.5	40.5	10.0	30.5
2014	51.0	10.5	40.5	10.0	30.5
2015	56.0	15.5	40.5	10.0	30.5
2016 to 2035	56.0 [3]	15.5	40.5	10.0	30.5

[1] Data from Bulletin 132-93

[2] DWR to create a Capital Resources Account of $22.7 million from Bond Reserve Funds separate from the amounts shown.

[3] Initial estimate

Exhibit B

POSSIBLE IMPLEMENTATION

of an

INTERRUPTIBLE WATER SERVICE PROGRAM

* Present Surplus, Wet Weather and 12(d) water replaced by Interruptible water service. Any existing priorities to delivery of water beyond scheduled entitlement is eliminated; all Contractors will have equal priority to Interruptible water in proportion to entitlements.

Delivery Priority:

1. scheduled entitlement deliveries;
2. interruptible up to Table A;
3. non-project up to Table A;
4. all additional interruptible; and
5. all additional non-project water.

* Existing balances of the above water types eliminated.

* All Scheduled delivery allocations to be based on contractual Table A.

* Interruptible available only as determined by DWR after Scheduled deliveries and operational commitments are met.

* Interruptible allocations based on Table A for that year.

* Interruptible plus Scheduled entitlement may add up to more than a Contractor's Table A for that year.

* Submit request for Scheduled deliveries, if Interruptible water is available, then anything over Scheduled deliveries considered Interruptible as long as it's available.

* Interruptible water may not be carried over.

* Conveyance charges for interruptible deliveries same as Scheduled deliveries, even if the total amount goes over Table A for that year.

* Interruptible available to all reasonable, beneficial uses. (Not restricted to storage or recharge programs.)

* Delivery of Interruptible water in one year does not impact a Contractor's Table A or the allocation in the next year.

EXECUTIVE SUMMARY

The California Environmental Quality Act (CEQA) requires preparation of an environmental impact report (EIR) when a program such as implementation of the Monterey Agreement is believed to have a potential for significant impacts on the environment. The Central Coast Water Authority (CCWA) was designated by agreement among a majority of the State Water Project (SWP) Contractors and the Department of Water Resources (DWR) to act as the lead agency for CEQA compliance for the Monterey Agreement program EIR. The Monterey Agreement contains 14 principles, the implementation of some of which have the potential for ascertainable environmental consequences. This program EIR analyzes the Monterey Agreement implementation steps to the extent they are presently available.

PURPOSE AND NEED

Shortages of deliveries of water from the SWP have prompted SWP Contractors (both Agricultural Contractors and Municipal and Industrial [Urban] Contractors) to consider amendments to their water supply contracts with DWR. Some of the Contractors have considered litigation to resolve differences over water allocations. To avoid litigation, and to make the SWP operate more effectively for all Contractors, DWR and the Contractors have engaged in mediated negotiations toward a settlement of their disputes. The Monterey Agreement is the result of these negotiations.

PROPOSED ACTION AND ALTERNATIVES

The Monterey Agreement contains 14 principles, the implementation of some of which will have ascertainable and immediate environmental consequences. Some of these consequences, however, are difficult to quantify. Due to the uncertainty associated with the level of implementation of each of the program components, three program scenarios are defined. It is these scenarios (variants of the Proposed Action) and the No Project Alternative that are the subject of this EIR.

The five major program components of Monterey Agreement implementation, that when put into operation have the potential for current, tangible, and quantifiable environmental impacts, are as follows:

1. *Revisions to the methodology used to allocate water among Contractors.* Under the Monterey Agreement, water from existing SWP facilities is to be allocated based on entitlement; in years when SWP supplies are less than Contractor requests, water will be allocated in proportion to each Contractor's share of total Contractor entitlements to water, with no initial reduction in supplies to Agricultural Contractors; and existing categories of surplus, wet weather, and make-up water will be replaced by a single interruptible water category allocated on the basis of entitlement.

2. *Retirement of 45,000 acre-feet (AF) of agricultural entitlement.*

3. *Transfer by sale, between willing sellers and willing buyers, of 130,000 AF of entitlement from Agricultural Contractors to Urban Contractors.* This includes the potential for sales to non-Contractors as well as potential entitlement transfers among Urban Contractors.

4. *Changes in control of the Kern Fan Element (KFE) of the Kern Water Bank (KWB).* This change in control would be the sale or long term lease (with option to purchase) of the KFE and related assets by DWR to designated Agricultural Contractors. The KFE lands were acquired by DWR for the purpose of banking SWP water. The KWB

is defined as any opportunity to recharge SWP water in Kern County, the purpose of which is to store surplus water from the Sacramento-San Joaquin Delta during wet years for extraction during dry years to increase the SWP yield.

5. *Changes in the manner in which Castaic Lake and Lake Perris terminal reservoirs may be operated.* The Monterey Agreement provides that SWP Contractors who participate in repayment of the costs of Castaic and Perris Reservoirs will have an opportunity to directly utilize a portion of the respective capacities in order to optimize their water storage and supply operations to meet local Contractor needs and help ensure a firm water supply. To this end, these Contractors have proposed that approximately 50 percent of the active storage capacity of these reservoirs be available for withdrawal and use by these Contractors under a set of operational conditions.

These five major components form the basis for the analysis of environmental consequences in the three program scenarios. Also evaluated is the No Project Alternative, i.e., the Monterey Agreement is not implemented.

Alternatives that would accomplish many , but not all, of the objectives of the Monterey Agreement are also discussed. These include litigation among and between Contractors.

ENVIRONMENTAL CONSEQUENCES

A summary of potential environmental impacts associated with implementation of the Proposed Action when compared to status quo conditions, i.e., current conditions, is presented by resource area in Table ES-1.

TABLE ES-1 PROPOSED ACTION ENVIRONMENTAL IMPACTS SUMMARY

RESOURCE AREA	STATEWIDE IMPACTS	SITE-SPECIFIC IMPACTS		
		Kern Fan Element	*Castaic Lake*	*Lake Perris*
Geology and Soils	Negligible	Negligible	Scenarios A and B: Beneficial, stabilization of lake banks	Negligible
Water Resources				
Surface water	Negligible	Negligible	Scenarios A and B: Higher than historic surface elevation and storage Scenario C: Prolonged drawdown	Scenarios A and B: Historic surface elevation and storage maintained Scenario C: Prolonged drawdown
Water quality	Negligible	Negligible	Scenarios A and B: Negligible Scenario C: Beneficial	Negligible
Groundwater	Negligible	Negligible	Negligible	Negligible
Air Quality	Negligible	Negligible	Negligible	Negligible
Biological Resources	Indeterminate	Potentially adverse Mitigable	Negligible	Negligible
Cultural Resources	Indeterminate	Potentially adverse Mitigable	Scenario A: Negligible Scenarios B and C: Potentially mitigable	Scenario A: Negligible Scenarios B and C: Potentially mitigable
Land Use	Adverse, not significant	Negligible	Negligible	Negligible
Recreation	Indeterminate	Negligible	Scenarios A and B: Beneficial Scenario C: Adverse, not significant	Scenarios A and B: Beneficial Scenario C: Adverse, not significant
Socioeconomics	Adverse, not significant	Negligible	Negligible	Negligible
Health and Safety	Indeterminate	Negligible	Negligible	Negligible

Source: SAIC 1995.

1. INTRODUCTION

The California Environmental Quality Act (CEQA) requires preparation of an environmental impact report (EIR) when a program such as implementation of the Monterey Agreement is believed to have a potential for significant impacts on the environment. An EIR is prepared to "identify the significant effects of a project [or program] on the environment, to identify alternatives to the project, and to indicate the manner in which such significant effects can be mitigated or avoided" (Public Resources Code section 2100, et seq., Title 14 California Administrative Code, section 15000, et seq.). An EIR serves as an informational document for decisionmakers and the general public regarding the environmental consequences of a proposed program.

The Central Coast Water Authority (CCWA) is the lead agency, designated by agreement among the Department of Water Resources (DWR) and a majority of the SWP Contractors, for CEQA compliance for implementation of the Monterey Agreement. The decision to prepare an EIR for the Monterey Agreement implementation was made following the completion of an Initial Study. A Notice of Preparation was published on February 7, 1995, and distributed to the California State Clearinghouse and other potentially interested parties.

1.1 PURPOSE OF A PROGRAM EIR

Several types of EIRs are defined under CEQA. Each is tailored to a different situation or intended use, e.g., Project EIR, Subsequent EIR, Addendum to an EIR, Staged EIR, and Program EIR. The most common type is the Project EIR that examines the environmental impacts of a specific development project.

The Monterey Agreement EIR is a Program EIR. The purpose of a Program EIR is to document a series of actions so related that they can be characterized as one project. The actions may be related in one or more of the following ways:

- by geographical proximity;
- as logical parts in a chain of contemplated actions;
- in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or
- as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

The proposal to implement the Monterey Agreement fulfills both the second and third criteria above, i.e., logical parts in a chain of contemplated actions, and a series of actions related to the issuance of rules, regulations, plans, and other general criteria to govern the conduct of a continuing program.

The Program EIR has a number of advantages. For example, a Program EIR may:

- provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action;
- ensure consideration of cumulative actions that might be slighted in a case-by-case analysis;
- avoid duplicative reconsideration of basic policy considerations;
- allow the Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when

the agency has greater flexibility to deal with basic problems or cumulative impacts; and

- allow reduction in paperwork.

The Program EIR can be used with later activities. Subsequent activities in the program must be examined in the light of the Program EIR to determine whether an additional environmental document must be prepared. The Program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the program described in the Program EIR, and no further environmental documentation would be required.

1.2 HISTORICAL BACKGROUND

The State Water Project (SWP) is a large water supply and distribution system authorized by an act of the California state legislature in 1959 and approved by the voters in 1960. The California Department of Water Resources (DWR) operates the facilities comprising the SWP. These facilities include dams, reservoirs, pumping plants, power plants, and canals and tunnels (see Figure 1.2-1). Primary facilities of the SWP include the following:

- Oroville Dam and Reservoir on the Feather River (a primary water supply source);
- San Luis Reservoir near Los Banos;
- Terminal reservoirs at Del Valle in the north and Castaic and Perris in the south;
- Banks Pumping Plant in the Sacramento-San Joaquin Delta near Tracy (a water diversion point);
- North Bay Aqueduct (the means of water transport to the northern San Francisco Bay Area);
- South Bay Aqueduct (the means of water transport to the southern San Francisco Bay Area); and
- California Aqueduct with its various branches and pipelines (the means of water transport to Central and Southern California).

In the early 1960s, DWR entered into a series of substantially similar water supply contracts with various urban and agricultural water suppliers, or Contractors. Each Contractor received a right to service for an annual quantity of water entitlement and capacity for delivery of that entitlement in return for payments intended to cover capital, operation, and maintenance costs.

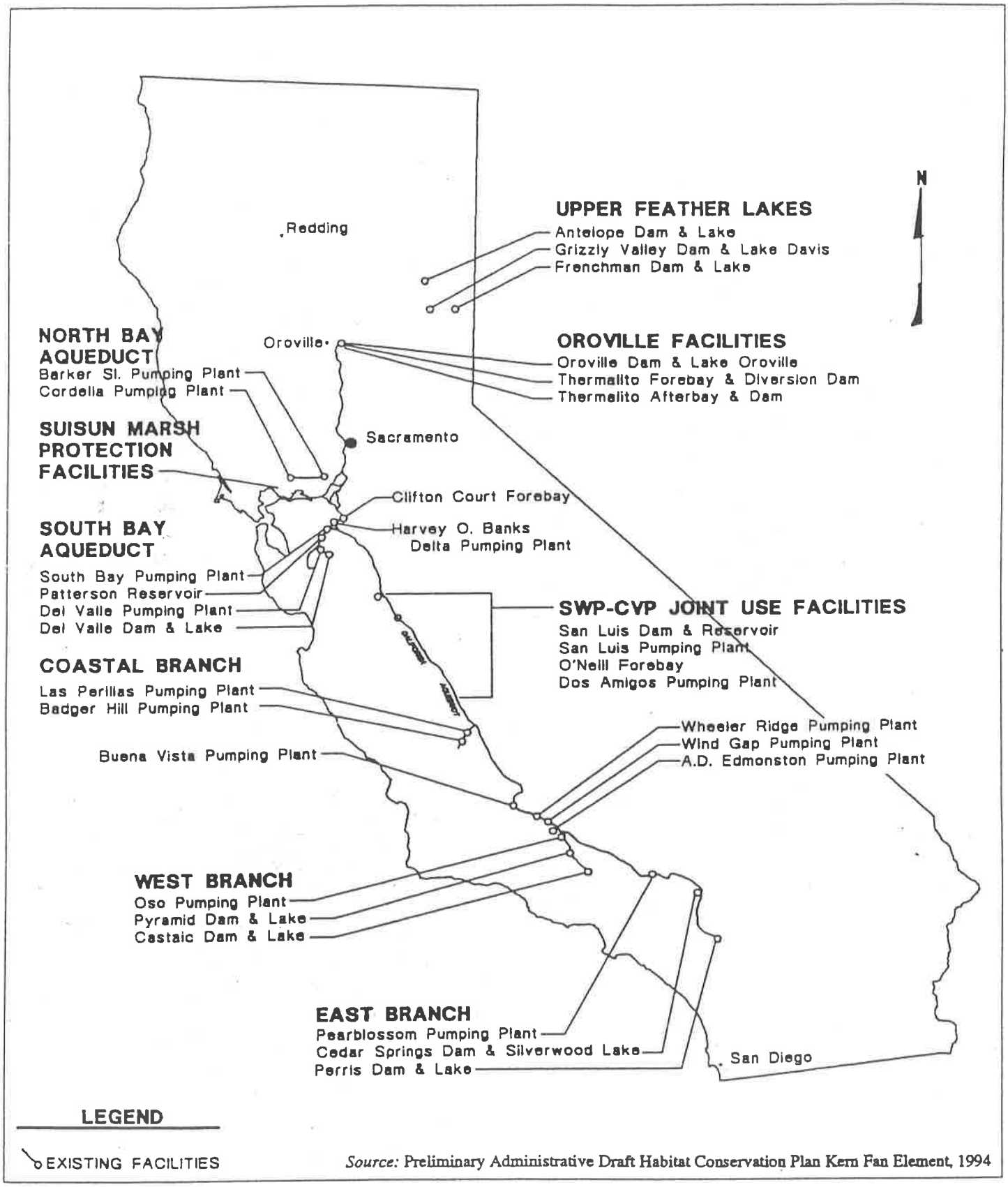
1.3 PARTICIPANTS IN THE STATE WATER PROJECT

The SWP has 29 participating contractors (Contractors). They are listed and their respective service areas are illustrated in Figure 1.3-1.

Any or all of the Contractors may participate in the rights and obligations of any contract amendments approved consistent with the Monterey Agreement.

1.4 PURPOSE AND NEED

The Monterey Agreement is a statement of principles forming the foundation for agreements and amendments among Contractors and DWR that will settle their disputes over allocations of SWP water and certain operational aspects of the SWP.



Source: Preliminary Administrative Draft Habitat Conservation Plan Kern Fan Element, 1994

Figure 1.2-1. SWP Facilities.

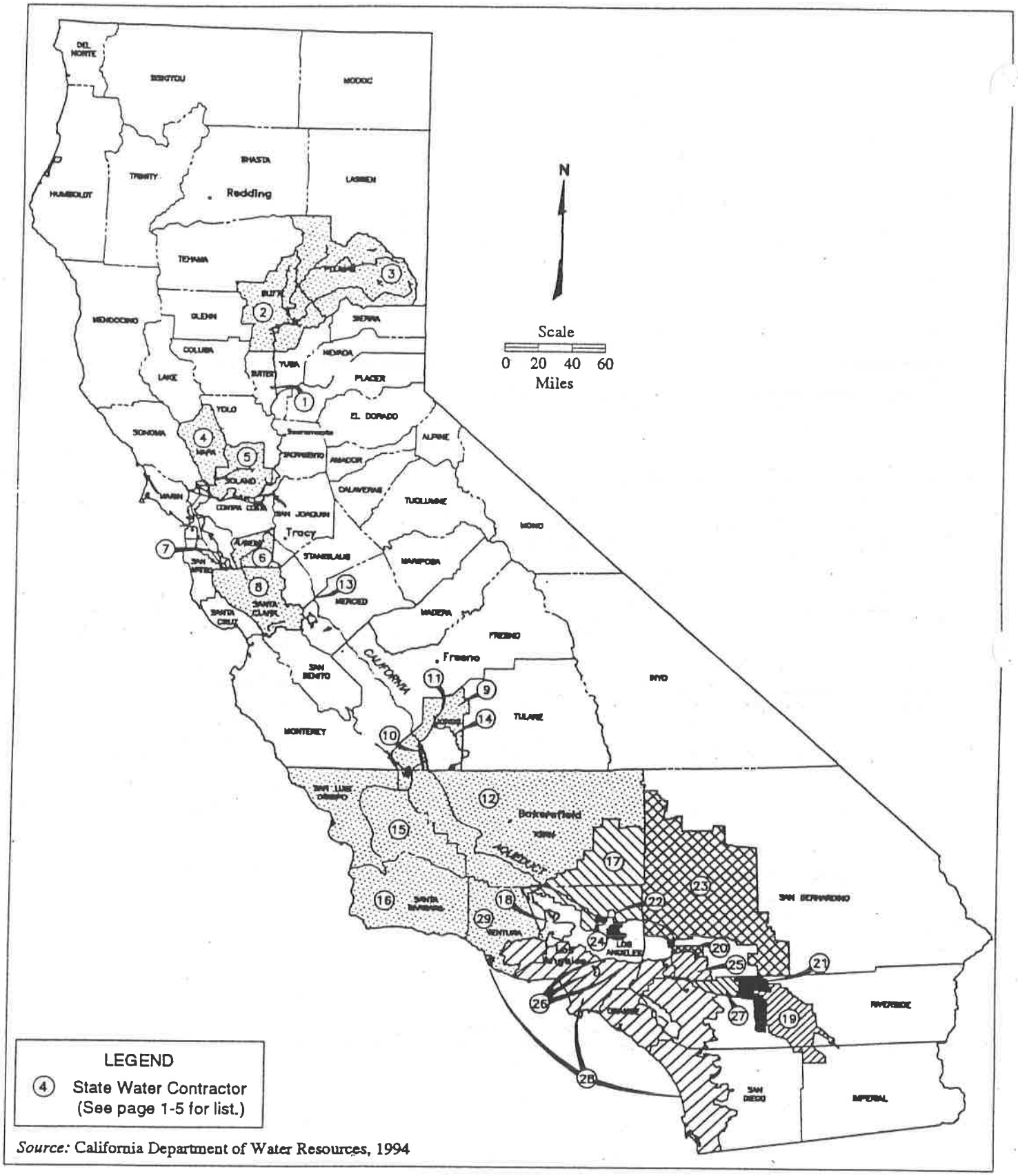


Figure 1.3-1. State water contractor service areas.

FIGURE 1.3-1. STATE WATER CONTRACTOR SERVICE AREAS

Upper Feather River Area

1. City of Yuba City
2. County of Butte
3. Plumas County Flood Control and Water Conservation District

North Bay Area

4. Napa County Flood Control and Water Conservation District
5. Solano County Water Agency

South Bay Area

6. Alameda County Flood Control and Water Conservation District, Zone 7
7. Alameda County Water District
8. Santa Clara Valley Water District

San Joaquin Valley Area

9. County of Kings
10. Dudley Ridge Water District
11. Empire West Side Irrigation District
12. Kern County Water Agency
13. Oak Flat Water District
14. Tulare Lake Basin Water Storage District

Central Coast Area

15. San Luis Obispo County Flood Control and Water Conservation District
16. Santa Barbara County Flood Control and Water Conservation District (Central Coast Water Authority)

Southern California Area

17. Antelope Valley - East Kern Water Agency
18. Castaic Lake Water Agency
19. Coachella Valley Water District
20. Crestline - Lake Arrowhead Water Agency
21. Desert Water Agency
22. Littlerock Creek Irrigation District
23. Mojave Water Agency
24. Palmdale Water District
25. San Bernardino Valley Municipal Water District
26. San Gabriel Valley Municipal Water District
27. San Gorgonio Pass Water Agency
28. The Metropolitan Water District of Southern California
29. Ventura County Flood Control District

SWP delivery shortfalls have prompted both agricultural and municipal and industrial (referred to as "Urban" or "M&I") SWP Contractors to scrutinize DWR procedures and to consider amendments to their water supply contracts with DWR. Some of the Contractors have considered litigation to resolve differences over water allocations. To avoid litigation, and to make the SWP operate more effectively and reliably for all Contractors, DWR and the Contractors engaged in mediated negotiations toward a settlement of their disputes.

1.5 PROVISIONS OF THE MONTEREY AGREEMENT

The Contractors' water contracts have been and will be amended from time to time to accommodate changing conditions. The Monterey Agreement is the most recent set of agreed principles forming a basis for further amendments by Contractors. The major conditions addressed by the Monterey Agreement include the following:

- allocation of SWP water;
- potential transfers of entitlements;
- greater reliability of water supply to all Contractors;
- integration of SWP terminal reservoirs into local water supply systems; and
- stabilization of water rates.

The Monterey Agreement Statement of Principles is intended to settle disputes over water allocations and certain operational aspects of the SWP. A copy of the Monterey Agreement is attached as Appendix A. Each of the 14 principles is briefly described below.

Principle 1 — Water Allocations. In the future, allocation of project water from existing facilities will be based on entitlements rather than the previously used methodology.

Principle 2 — Water Allocations. In years when total available SWP supplies are less than total Contractor requests for water, water will be allocated in proportion to each Contractor's share of total Contractor entitlements, thereby eliminating the initial supply reduction to Agricultural Contractors, which is currently applied with certain limitations. If a Contractor's allocation exceeds its annual request for water, the water in excess will be allocated to Contractors with unmet requests in proportion to their entitlement. This revised allocation methodology has two exceptions: (a) compliance with a valid court order or an order of the State Water Resources Control Board (SWRCB), and (b) a declaration of emergency by the Governor.

Principle 3 — Kern Water Bank. Property comprising the Kern Fan Element (KFE) of the Kern Water Bank (KWB) currently owned by DWR will be sold or leased (with an option to purchase) on a long-term basis to designated Agricultural Contractors. Any project water remaining in groundwater storage programs that use KFE facilities for extraction at the time of transfer of the property will be split equally between DWR and the transferee of the property. An annual entitlement of 45,000 acre-feet (AF) of agricultural water will be transferred to DWR and retired. Subject to the approval of designated Agricultural Contractors, Urban Contractors may be granted access to and use of the KFE property and related assets.

Principle 4 — Permanent Sales of Entitlement. Agricultural Contractors will make available for permanent transfer (on a willing buyer-willing seller basis) 130,000 AF of annual entitlements to Urban Contractors, or to non-Contractors after a right of first refusal by Urban Contractors. Transfers of

entitlements between other Contractors will also be allowed.

Principle 5 — Restructuring to Ensure Financial Integrity of the SWP. The SWP Contractors and DWR will develop a number of financial programs with SWP funds that will (1) establish a SWP operating reserve, (2) establish a program for water rate management, and (3) provide for revenue bond financing of specific planned future operation and maintenance facilities, if such facilities are constructed.

Principle 6 — Terminal Reservoirs — Points of Delivery. SWP Contractors who participate in repayment of the costs of Castaic and Perris reservoirs will have an opportunity to use the storage in those reservoirs. Subject to certain limitations, these Contractors will be provided the opportunity to directly utilize a portion of the respective storage capacities of these reservoirs in order to optimize the operation of both local and SWP facilities. The potential to work out a similar arrangement for Del Valle Reservoir was included in this Principle, but it has currently been decided not to pursue such arrangements.

Principle 7 — Interruptible Water Service Program. The three current categories of water remaining after entitlements and project operational commitments have been satisfied, i.e., surplus, wet weather, and 12(d) (shortage make-up provision) will be replaced by a single category of interruptible water service. This interruptible water will be allocated based on entitlement and delivered at the melded SWP power rate.

Principle 8 — Non-project Water Transport. Contractors shall have the right to transport non-Project water in SWP facilities at the melded SWP power rate.

Principle 9 — Water Storage Outside Service Area. A Contractor may elect to be either a "seller," as provided in Principle 10, or a "storer" of water in any one single year but cannot be both in the same year. This principle outlines guidelines pertinent to the storage of project water. Water stored by a Contractor outside its service area is reserved exclusively for use in the service area of the storer and cannot be sold. Within certain constraints, SWP water may be stored from year to year in SWP surface conservation storage facilities or in non-SWP surface storage facilities outside a Contractor's service area. There are no limits on groundwater storage of SWP water outside a Contractor's service area.

Principle 10 — Turn-back Water Pool Sales. This principle refers to Contractors who choose the "seller" track on an annual basis and outlines a set of priorities that must be followed in the annual sale of allocations of entitlement water. An annual turn-back pool of water is created and administered by DWR under which water allocated but not needed by a Contractor may be sold to interested Contractors and/or DWR at a percentage of the Delta Water Rate, or to non-contractors.

Principle 11 — Conforming Contract Amendments. SWP contracts will be amended as appropriate to conform to the Statement of Principles.

Principle 12 — Project Improvements. DWR reaffirms its obligation to make all reasonable efforts to complete the SWP.

Principle 13 — Integrated Package. Contractors must choose to participate in all the provisions of the Principles or none, i.e., the principles come as a package.

Principle 14 — No Precedent. If the parties do not enter into the amendments, they agree not to utilize the Statement of Principles document in any court proceedings relating to matters addressed in this agreement.

1.6 ENVIRONMENTAL CONSEQUENCES CATEGORIES

CEQA requires identification of potential environmental consequences of implementing the Monterey Agreement. At the outset it is helpful to categorize the principles in terms of their potential for generating environmental effects. Five categories of environmental impacts have been developed:

A. Potential for current, ascertainable environmental impacts;

B. No direct or indirect environmental impact ascertainable, but have potential for economic impact;

C. Potential for future environmental impacts, but not ascertainable at present;

D. No potential for environmental impacts, but ratify, clarify or restate present contract terms or state law; and

E. No potential for environmental impacts, but simply contain standard legal parlance.

1.7 ENVIRONMENTAL CONSEQUENCES OF MONTEREY AGREEMENT PRINCIPLES

The 14 principles of the Monterey Agreement are classified based on the five environmental consequences categories. The results are presented in Table 1.7-1. The primary focus of this EIR is on actions emanating from the full or partial implementation of the principles that fall within the first category of environmental consequences, i.e., those having the potential for current, ascertainable environmental impacts. These are principles 1, 2, 3, 4, 6, and 7, which address the following items: water allocations in general, water allocations when requests exceed supply, Kern Fan Element, permanent sale of entitlement, terminal reservoirs, and interruptible water service program.

Table 1.7-1
Cross Tabulation of Monterey Agreement Principles by Environmental Consequence Category

	Environmental Consequences Category				
Principle	*A*	*B*	*C*	*D*	*E*
1	Yes				
2	Yes				
3	Yes				
4	Yes				
5		Yes			
6	Yes				
7	Yes				
8				Yes	
9			Yes		
10		Yes			
11					Yes
12				Yes	
13					Yes
14					Yes

Source: SAIC, 1995.

1.8 CONCURRENT SWP ENTITLEMENT ACTIVITIES

Other concurrent SWP entitlement activities are summarized below. Final implementation of some of these activities, as currently proposed, is subject to final implementation of the Monterey Principles; others could proceed without implementation of the Monterey Agreement.

Santa Barbara County and San Luis Obispo County Flood Control and Water Conservation Districts

When the Santa Barbara County Flood Control and Water Conservation District (Santa Barbara County) and the San Luis Obispo Flood Control and Water Conservation District (San Luis Obispo County) initially contracted to receive SWP water, Santa Barbara obtained an entitlement for 57,700 AF, which it later

reduced to 45,486 AF, by amending its agreement with DWR. The amendment reserved to Santa Barbara County the option to reacquire the 12,214 AF entitlement by paying certain accrued costs or to have DWR sell or assign the capacity rights to some other project purpose. Since Santa Barbara County has determined that no local interests wish to pay the accrued costs and reacquire some or all of this entitlement, the County is in the process of attempting to dispose of its capacity rights, but no agreement has been reached. Santa Barbara County's Contractors have requested 45,486 AF of entitlement.

When San Luis Obispo County initially contracted for SWP water, it obtained an entitlement for 25,000 AF. Its contractors have requested a total of approximately 6,000-7,000 AF. As a result, San Luis Obispo is in the process of seeking a market or markets for the portion of its entitlement that has not been subscribed. Negotiations have been instituted for a potential transfer but the outcome is unknown.

Berrenda Mesa Water District - Dublin San Ramon Services District

Berrenda Mesa Water District (BMWD), located in the northwest corner of Kern County, plans to declare 75,000 AF of SWP agricultural water entitlement as available for transfer. BMWD negotiated and agreed, prior to the Monterey Agreement being executed, to an arrangement with the Dublin San Ramon Services District (DSRSD), which supplies water to northern Alameda County, whereby DSRSD will purchase up to 8,500 AF of the available water entitlement for transfer from BMWD. The transfer amount would be diverted from the California Aqueduct at the Banks Pumping Plant in lieu of BMWD taking delivery from the Coastal Branch of the California Aqueduct. The transferred water entitlement would be delivered to DSRSD utilizing the unobligated capacity of the South Bay Aqueduct (SBA) and the South Bay Pumping Plant. The unobligated SBA capacity could be purchased by DSRSD or Alameda County Flood Control and Water Conservation District (Zone 7), which in turn would be sold to DSRSD.

Semitropic Water Storage District - Metropolitan Water District of Southern California

Prior to the Monterey Agreement being executed, Semitropic Water Storage District (SWSD) and Metropolitan Water District of Southern California (MWD) entered into an agreement to develop a water banking and exchange program. A temporary storage program was implemented in 1993 when a portion (50,000 AF) of the 1992 carry-over water from the SWP due to MWD was stored in the groundwater basin underlying SWSD. Under the agreement, water could be stored by either direct spreading or in-lieu means. Returned water could either be pumped from the groundwater basin and delivered directly to the California Aqueduct or exchanged for an equal quantity of Kern County Water Agency (KCWA) SWP entitlement water which would otherwise be delivered to SWSD.

Based on the success of the temporary program, a long-term program was negotiated in December of 1994. When finally implemented, this agreement would allow MWD to store, at any time, up to 350,000 AF of SWP or other water supplies in the groundwater basin underlying SWSD. The capacity of the long-term storage program is one million AF. Since MWD did not contract for the full capacity offered by the program, SWSD has contacted DWR and other SWP Contractors to solicit their participation. The final EIR for this project was published in 1994.

Dudley Ridge Water District - San Gabriel Valley Municipal Water District

In 1994, prior to the Monterey Agreement, Dudley Ridge Water District (DRWD) and San Gabriel Valley Municipal Water District

(SGVMWD) developed a draft agreement for a 25-year water banking program. The objectives of the water banking program are to allow DRWD to increase the firmness of a portion of their SWP supply and to provide SGVMWD additional water and flexibility in meeting their water demands. Under the agreement, DRWD may store up to 20,000 AF in SGVMWD's groundwater storage account in the Main San Gabriel Basin. SGVMWD would retain 5 percent of the water delivered by DRWD. Upon request by DRWD, SGVMWD will have a portion of their SWP water delivered to DRWD (not to exceed the water in storage and subject to availability after SGVMWD's retention of up to 5,000 AF for power contract obligations).