

Tsuehinda

**ADDENDUM**  
**ENVIRONMENTAL IMPACT REPORT**

**LIVERMORE-AMADOR VALLEY QUARRY**  
**RECLAMATION SPECIFIC PLAN**

**Alameda County Planning Department**  
**August 15, 1980**

This Addendum to the Draft Environmental Impact Report is in two parts. Section I includes all material submitted concerning the Draft EIR, and Planning Staff comments on those responses. Section II is a summary of impacts of the project, based on the "Alternative Reclamation Plan for the Livermore-Amador Valley Quarry Area" submitted by the quarry operators' consultant in April, 1980. The Alternative Plan was developed to mitigate impacts of the original 1977 Plan on water resources, impacts which were identified in the Draft EIR. Essentially, impacts of the Alternative Plan on water resources are greatly reduced over the original Plan. Remaining impacts concern implementability of the Plan, demonstration of its viability, and financing its cost. The "Alternative Reclamation Plan" was referred to interested parties based on the public record of this matter. Additional copies are available upon request from Alameda County Planning Department.





environmental engineers, scientists,  
planners, & management consultants

WRIE

WATER RESOURCES ENGINEERS

a Camp Dresser & McKee firm

710 South Broadway  
Walnut Creek, California 94596  
415 933-4500

July 24, 1979

Mr. Paul Deutsch  
Alameda County Planning Department  
1404 Concannon Boulevard  
Livermore, CA 94550

Draft EIR for Livermore-Amador Valley  
Quarry Reclamation Plan

Dear Paul:

Following are comments on subject.

Summary, page 3, #4 of "adverse impact" list - unless mitigated salts will build up, I suggest leaving off the word "potential", so sentence reads "Degradation of water quality. . . ."

Page 13, paragraph 2, sentence 2: comma after the word "complete".

Page 17, Table 6: need "Table 6" in heading

Page 17, Table 7: underline subheadings

Page 25, section b(3), paragraph 2: Unclear. Second and third sentences should be combined as follows: "Essentially, the natural transmission function of the upper aquifer would be replaced with pipes, canals, and the lakes; the water could be moved from east to west with the facilities shown in Figure 4D."

Strike the fourth sentence and replace with a paragraph: "The adverse impacts would be the provision of water required to fill the open storage space, which could exceed 100,000 acre feet, the increased cost of moving the water, and the increased evaporative losses." — *deleted*

Page 27, paragraph 1, sentence 2: insert word "near" between "the" and "future."

Page 30, section 6, paragraph 2, sentence 1, line 3: the words ".... these waters into the groundwater basin improves the general quality of ..." should be inserted between "of" and "the". They were left out.

Page 35, section 6, paragraph 2, sentence 3, line 10: start the sentence with "The".

Mr. Paul Deutsch  
July 24, 1979  
Page 2

**WRE**

**WATER RESOURCES ENGINEERS**  
a Camp Dresser & McKee firm

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Page 58, paragraph 3, last sentence: insert "... the groundwater resources, including ..." between "maintain" and "water".

Except for the page 25 change, the above are mostly editorial in nature. The 20,000 acre feet of storage originally in the page 25 paragraph, represents the future increase (net) in useable void space above the present groundwater storage space; the 100,000 acre feet represents simply the total void space. As I mentioned to you on the phone today, I discussed this change with Jerry Killingstad of Zone 7.

Sincerely,

WATER RESOURCES ENGINEERS

*Kenneth R. Henneman*  
Kenneth R. Henneman  
Vice President

KRH/sk

Enclosure

cc: J. K. Killingstad

BOARD OF TRUSTEES

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President

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# Alameda County

## Mosquito Abatement District

FRED C. ROBERTS  
MANAGER

3024 EAST SEVENTH STREET  
OAKLAND, CALIFORNIA 94611  
(415) 831-7221

August 2, 1979

Mr. Paul Deutsch, Planner II  
Alameda Co. Planning Dept.  
399 Elmhurst Street  
Hayward, Ca. 94544

Dear Mr. Deutsch:

RE: Livermore-Amador Valley Quarry Reclamation Plan

The above mentioned EIR appears to properly address the potential mosquito problems associated with the reclamation plans and provides mechanisms to mitigate them. From our point of view, the restructuring of the natural channel of the Arroyo Del Valle, and the implementation of the mitigation measures as outlined in the project, would provide real benefits to the health and welfare of the surrounding communities.

A technical correction could be made, however, concerning a statement on page 49 (II,D,9). The text erroneously states that malaria mosquitoes have not been introduced to the area. On the contrary, two species of mosquitoes currently inhabit the study locality that are capable of transmitting malaria. Fortunately, the mosquito populations cannot transmit the disease without first biting individuals infected with malaria.

The potential for transmission of malaria would increase if the density of the mosquito (vector) populations were to increase and the number of persons with malaria also increased. The likelihood of malaria infected persons inhabiting the area has increased markedly with the current level of foreign travel and the dramatic resurgence of malaria in many areas of the world. Fortunately, the report specifies mitigation measures that, if carried out, would reduce the levels of vector mosquitoes thereby reducing the potential for malaria transmission.

Thank you for the opportunity to provide our point of view.

Sincerely,

*Fred C. Roberts*  
Fred C. Roberts  
MANAGER

FCR:ep

RECEIVED  
1979 AUG 10 AM 11:15  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

STEWART B. GROSS, M.D., Agency Director



4505 Eggers Drive  
Fremont, California 94533  
(415) 763-1550 Ext. 234  
(415) 791-4600

August 10, 1979

Mr. Paul Deutsch, Planner II  
Alameda County Planning Department  
399 Elmhurst Street  
Hayward, California 94544

Dear Mr. Deutsch:

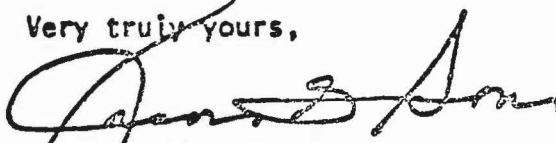
This is to acknowledge the receipt, on August 6, 1979, of the EIR Draft, on the Livermore-Amador Valley Quarry Reclamation Plan. A review of the report indicated it to be comprehensive and detailed. The various proposals for the reclamation of the quarries were presented fairly well. The following comments are submitted for your information:

1. The concept of utilizing the abandoned quarries for a major aquatic recreational area should be discouraged until the potential safety hazard of steep slopes is resolved. As mentioned on page 42, "the slope proposed is much too steep for general access for water-oriented recreational use."
2. For proper operation and maintenance, a responsible agency, such as East Bay Regional Park District, should undertake a water management program that will encompass the areas of physical, as well as biological safety. Briefly, this would include:
  - a) If swimming is allowed, lifeguard service should be provided and warning signs should be posted as specified in the California Swimming Pool Act. In addition, bacteriological sampling of swimming areas should be conducted.
  - b) Maintain the water quality for bathing and contact sports, i.e., removal of aquatic vegetation and treatment with molluscicide to eliminate fresh water snails which often serve as host for larvae forms that cause schistosomiasis (swimmer's itch).
  - c) Consult with Alameda County Mosquito Abatement District for elimination of likely breeding areas by incorporating proper mosquito control techniques.

3. Sewage waste from food concession stands, restroom facilities and fish cleaning stations should be discharged into public sewers. The installation of septic tank leachfield systems should be prohibited to prevent the degradation of the aquifers.
4. A solid waste program should be provided to educate the public against littering and dumping on the premises. Proper storage and removal facilities should be included to minimize potential rodent and insect problems.
5. The alternative reclamation plan for the creation of a fish farm operation appears to be ecologically sound and appears to be a satisfactory use for the abandoned quarries.

If I can be of further assistance to you, please call.

Very truly yours,



Jason G. Som, Bureau Chief  
Bureau of Environmental Services

JGS:dcn

cc: Takeo Shirasawa, attention: Storm Goranson

RECEIVED

AQUA NOVA  
FISHERIES, Co

AUG 15 PM 2 04

ALAMEDA COUNTY PLANNING  
DEPARTMENT

August 15, 1979

Alameda County Planning Commission  
399 Elmhurst, Room 136  
Hayward, CA. 94544

Commissioners:

In reference to the Environmental Impact Report issued recently on the Reclamation Plan for the Livermore-Amador Valley Quarry Area, I would like to present to you information regarding the Aqua Nova Fisheries Project at the Kaiser Sand and Gravel Quarries. It is hoped that this information will be of value to you in assessing a quarry reclamation alternative which offers the potential of returning depleted pits into agriculturally productive acreage.

First of all, a brief background of Aqua Nova Fisheries and of aquaculture in general. In 1977, having been exposed to the Pleasanton quarries for the first time, I was interested in exploring the possible potential fish farming, or aquaculture in the quarry ponds. This interest led to 2 years of small experiments in raising fish with the cooperation and assistance of Kaiser engineer Larry Appleton. On September 1978 a lease agreement between Kaiser and myself was completed which allowed me to raise private funds to finance the present Aqua Nova pilot project. This present project has been involved with trout and catfish culture, and its success warrants further development and expansion of production facilities.

Aquaculture activity in the United States started with government salmon projects a century ago. Today, about one quarter of the nation's salmon originate in hatcheries. Private aquaculture presently produces 40% of oysters consumed, 50% of catfish and crawfish, and nearly all of the trout for a total annual production of 143 million pounds. This is about 3 percent of the roughly 4.7 billion pounds of fish landed at U.S. ports. While the demand for fishery products increases, supply from conventional sources, that is, the ocean, remain constant.

The U.S. Congress has recognized aquaculture as a potential source to fill this disparity. Also, realizing that the U.S. in 1977 experienced a \$4.5 billion trade deficit in fishery products alone, Congress introduced and passed the Aquaculture Act of 1978

which intended to provide funds for private research and development in aquaculture. This particular bill was pocket vetoed by President Carter last December. The sponsors are now planning to re-introduce an amended version which hopefully will satisfy the President.

Noting the national attention that aquaculture has received, and the predicted increases in demand for aquaculture products, it is apparent that satisfactory water acreage, especially that of freshwater acreage, will be a limiting factor of increased production. It is in this regard that I feel that the Livermore-Amador Valley gravel quarry area should be viewed as a valuable and unique asset to be developed to its utmost. It should NOT be considered a depleted resource and an indefinite liability to the residents of Alameda County.

Fish farming projects, incidentally, are making depleted gravel quarries productive elsewhere in California. Both the Yuba Goldfields in Marysville and the Consolidated Rock quarries in Los Angeles are now in trout production. Trout sold recently in Alpha Beta and Albertson Stores have come from these quarry trout farms.

To address the EIR now specifically, I would like to list some of the advantages that fish farming can provide as a reclamation alternative:

- 1) Fish farming is a beneficial use of the groundwater. It returns the acreage to agricultural productivity. It can meet or exceed production in terms of pounds protein per acre relative to conventional farming, and is relatively energy independent compared to conventional farming.
- 2) Water quality must be maintained to ensure well-being and quality of fish. Artificial circulation required in deep pits will eliminate stagnation and reduce evaporation. It will also reduce potential algae blooms.
- 3) Fish farming can actually improve water quality. Data to date has shown no increase in TDS, and a reduction in nitrate. It is known that fish adsorb calcium and magnesium (major components of water hardness) from their water environment, hence these elements will be removed when the fish are harvested. Nitrates can be reduced by a biological process known as denitrification that occurs only under conditions that exist when the fish farm is operating.
- 4) Fish farming makes depleted pits usable without major physical improvements. Specifically, the 1:1 slopes are preferred over gentle slopes. This is due to the fact that



- fouling aquatic vegetation can develop with the flatter slopes. Also, bird predation can cause severe losses of fish in the shallow bank areas.
- 5) Uncapped settling ponds can be used without concern for subsidence and drainage. This acreage is especially ideal for sturgeon and catfish which prefer warm and shallow water.
  - 6) Fish farm can reduce health and safety hazards. Farm employees will provide 365 days/year security to prevent unauthorized people from entering quarry area. Also, mosquito danger is reduced with significant numbers of fish in the lakes.

Again, this information is provided to help you assess fish farming as a reclamation alternative for the quarry area. Having personally spent six years researching aquaculture techniques and 3 years conducting experiments and pilot projects at the Kaiser quarries, I am convinced that aquaculture is a logical and beneficial use of the quarry lake acreage. It, as well as being agriculturally productive, reduces the potential health and safety hazards that would undoubtedly exist if the quarries were unused and unattended.

Kaiser Sand and Gravel has been very supportive of the Aqua Nova Project. Within five years we hope to have the full 200 acre quarry site northeast of the Kaiser plant in fish production. Rhodes-Jamieson has also expressed an interest in developing their present and future lake acreage north of Stanley Boulevard into commercial fish farming. This combined acreage would warrant on-site processing, marketing and distribution facilities that would provide needed employment and tax income for the Pleasanton and Livermore community.

Please feel free to contact me if you have any comments or questions concerning my aquaculture experience at the Kaiser quarries.

Very truly yours,



Dana K. Ripley





ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

1404 CONCANNON BOULEVARD    6    LIVERMORE, CALIFORNIA 94550    6    (415) 443-8300

INTER-DEPARTMENT COMMUNICATION

DATE:        AUGUST 20, 1979  
TO:         ALAMEDA COUNTY PLANNING COMMISSION  
FROM:       MUN J. MAR, GENERAL MANAGER  
SUBJECT:    SPECIFIC PLAN FOR LIVERMORE-AMADOR VALLEY SURFACE MINING RECLAMATION

As noted in the summary of the Draft EIR for the proposed Quarry Reclamation Plan, positive impacts along with many adverse impacts are exposed. The proposed plan, which incorporates the concept of a chain of lakes, attempts to provide opportunities for offsetting impedance of subsurface flow and loss of ground water storage along with potential flood control and recreational uses. Although the Plan appears to meet certain of these objectives, adverse impacts on the water resources exist and are subject to mitigation. How these adverse impacts are to be mitigated remains to be developed and implemented.

Accordingly, we have met with the Operators' representative, Mr. Dick Karn, to review this situation. We concluded that it is now timely for the Operators and the Zone to begin some "brainstorming" sessions with the objective of determining how the impacts could be adequately mitigated. Hopefully, this will lessen the problems and result in a better reclamation plan.

The Zone 7 Board of Directors on August 15, 1979, concurred in this approach of a cooperative effort between the Operators and the Zone staff to evaluate plan modifications for mitigating the adverse impacts. Therefore, the Zone is supportive of a time extension for adopting the reclamation plan. The review and finalization of the Draft EIR should continue however, in order to allow any additional comments to be brought forth at this time.

Although we are proceeding along a course of attempting to develop mitigation measures on the water resources impacts, we would call your attention to the potential that some of the major conflicts between the extraction of sand and gravel resources and the utilization of the ground water resources may not be resolved, particularly when you consider the 50 years or more in which mining is to continue.

Accordingly, we support periodic reviews and modifications to the plan(s) that will be subsequently adopted. We also support the concept that the costs of such effort should be at the expense of the users of the sand and gravel. This

could be accomplished through the levy of a tonnage fee. Funds, could then be collected to ensure the successful development and continual operation and maintenance of all elements of the reclamation plan as it becomes completed.

We believe that without some pre-established financial and institutional arrangement, many of the ideas that have come forth or will come forth may never be fully evaluated, developed and carried out. What would be better than having the users of the sand and gravel pay for costs associated with mitigation of adverse effects of producing the sand and gravel. After all, shouldn't the user pay?

In the context of the user paying, the following is a recommended approach to ensure the successful completion of a satisfactory plan which would be fully developed at the conclusion of quarrying:

1. Include as a condition of plan approval, the requirement that the plan be reviewed and updated on a periodic basis.
2. Require the establishment of a trust fund to finance all costs associated with further development and implementation of mitigation measures that have been or will be identified.
3. Money for the trust fund would be from a levy imposed on the weight of the sand and gravel removed and sold.
4. The amount of levy would be reviewed and adjusted from time-to-time to ensure that all potential costs would be adequately met.
5. Each operator could retain a vested interest in the trust fund in proportion to the total amount contributed from their individual operation.
6. Administration of the trust fund could be the responsibility of the County, acting as lead agency, or a board of trustees comprising representatives of the operators, the County and Zone 7. (Possible composition might be a seven member board with one from each operator, one from the County, two from Zone 7 and one selected at large by the first six members.)
7. The fund would finance such items as:
  - a. The services of consultants or existing staff in planning and evaluating mitigation measures and overall plan review and modification.
  - b. The facilities needed to provide mitigation of the adverse impacts.
  - c. Purchase of make-up water for dead storage in depleted pits for water lost through evaporation and other quality controls.
  - d. The operation and maintenance of all facilities to comply with the final reclamation plan.

Planning Commission  
Page 3  
August 20, 1979

Assuming that adoption of the specific plan is several months in the future, we ask your thoughtful consideration of this recommendation, recognizing that you may have ideas that would further enhance the concept of a fund to ensure faithful performance of the plan.

One major area, and perhaps an obvious one, that will be evaluated in the forthcoming "brainstorming" sessions is the consideration of smaller water surface areas to reduce water loss and water quality degradation. The Zone's principal concern is that the Valley's ground-water basin and resources are adequately protected and left reasonably whole. We hope that this would result from the "brainstorming" sessions that we will be scheduling with the representatives of the Operators.

  
MUN J. MAR  
GENERAL MANAGER

HJM:bkm

cc: Zone 7 Directors



## CITY of LIVERMORE

2250 FIRST STREET • LIVERMORE, CA 94550 • (415) 447-2100

August 24, 1979

RECEIVED  
1979 AUG 28 AM 10:01  
ALAMEDA COUNTY PLANNING DEPARTMENT

Mr. Paul Deutsch, Planner II  
Development Planning Division  
Alameda County Planning Department  
399 Elmhurst Street  
Hayward, Ca. 94544

Dear Mr. Deutsch:

The City of Livermore has the following comments on the subject Draft E.I.R.:

The Plan is a good analysis of the environmental issues involved in the Master Reclamation Plan for the Livermore-Amador Quarry Area. We are of the opinion that there are three major issues in the Draft E.I.R. on which we wish to make comments. These three issues with our comments are:

1. Potential degradation of water quality due to low inflow in relation to high evaporation rates. (On Page 30):

More consideration should be given to reducing the evaporation rate of reduction of water areas. This could reduce the salt buildup in the area.

2. Increased safety hazard, difficulty of maintenance and access, potential for siltation, and limiting of potential land uses due to proposed 1:1 slopes. (On Page 31):

We strongly endorse the installation of 2 to 1 slopes rather than 1 to 1, as suggested by the Reclamation Plan. Adequate roadway widths should also be provided to service the shore areas of the lakes.

3. Management and use of the facilities to effectuate a water management plan in the long term. (On Page 39):

The E.I.R. should be further developed as to how the plan will be implemented, both in the interim and after mining is complete. We are particularly concerned that the responsibilities be clearly stated in the E.I.R. as to what the operators' and governmental agencies' responsibilities will be concerning the establishment and maintenance of the area.

We would strongly recommend that the E.I.R. be further developed as outlined above before it is certified.

Mr. Paul Deutsch  
August 24, 1979  
Page - 2

Thank you for referring the subject draft to us for comment. If you need clarification on our comments, please do not hesitate to contact us.

Very truly yours,



Howard W. Nies  
DIRECTOR OF PLANNING

HWN:gf  
cc: City Council  
Planning Commission

## CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

111 JACKSON STREET, ROOM 6040

OAKLAND 94607

Phone: Area Code 415

444-1235



August 29, 1979

File No. 2192.02 (RWS) ma

RECEIVED  
1979 AUG 30 AM 10:42  
ALAMEDA PLANNING  
COMMISSION

Alameda Planning Commission  
399 Elmhurst Street  
Hayward, CA 94544

SUBJECT: Livermore-Amador Valley Quarry Reclamation Specific  
Plan-Draft EIR

The subject Draft EIR (DEIR) is inadequate and should not be adopted as the County's specific plan because of the following deficiencies:

1. It does not quantify impacts of the existing quarry operations on groundwater quality. The LAVWMA Wastewater Reclamation and Reuse Study consultant (CH2M-Hill) has identified these operations as a source of probable groundwater degradation. I believe that this degradation should be quantified by the DEIR.
2. Future impacts of proposed operations and land reclamation on quality of groundwaters and surface waters have not been adequately identified and quantified.
3. It does not include specific mitigation measures for water quality degradation nor establish a mechanism for development and implementation of mitigation measures.

In addition, I question the statement in your staff's report (in the second paragraph, under the heading of "Planning Considerations") that "Adverse impacts primarily concern water resources and appear to be mitigable." As noted above, the water quality impacts of the plan are inadequately identified and completely unquantified. In view of this, the statement is not supported by any presently available information and should not be part of the hearing record.

Attached is a copy of this office's comments on the DEIR, dated August 7, 1979, which was forwarded to the SWRCB Division of Planning and Research with copy to Mr. Paul Deutsch. This spells out our concerns as to the need for:

- Identification and quantification of existing and future impacts of operations and reclamation.
- Development of specific mitigation measures.

August 29, 1979

- Development of costs associated with mitigation and of institutional and financial mechanisms for their implementation.
- Development of means for enforcing implementation of needed mitigation measures.

Mr. Robert Scholar has made this letter a part of the record of your public hearing on August 27, 1979.

Sincerely,



FRED H. DIERKER  
Executive Officer

Attachment: August 7, 1979 Memo

cc: Mr. Paul Deutsch (w/att.)  
Mr. Mun Mar (Zone 7, ACFC&WCD) (w/att.)  
Mr. R. Karn (w/att.)  
RBJ (w/att.)  
GJG (w/att.)  
TCW  
SIM  
RRS

REGIONAL WATER QUALITY CONTROL BOARD  
**SAN FRANCISCO BAY REGION**

INTERNAL MEMO

2192.02 (RRS)mm

John H. Huddleson

FROM: R. R. Scholar, Section Leader

Division of Planning and Research

DATE: August 7, 1979

SIGNATURE:

SUBJECT: DEIR - SCH #78050107 - Livermore-Amador Valley Quarry Reclamation Plan

I have reviewed the subject DEIR and the January 1977 report by Environ, entitled "Livermore-Amador Valley Quarry Reclamation Plan" which is cited in the DEIR as the County's basis for adoption of a Specific Plan for the quarry area's reclamation under Sections 65450 - 65553 of the Government Code. This office had also commented (May 17, 1978) on NOP #04217801, relative to the same subject. I have the following comments on the DEIR:

1. The DEIR must include specific data on impacts of the project on:
  - Groundwater quality, storage, movement and recharge;
  - Surface water quality and quantity in Arroyo del Valle and Arroyo Mocho; and
  - Quality and quantities of surface waters leaving the project area.
2. The sand and gravel quarry operators have vested rights to mine 2760 acres under existing County Permits. These Permits were issued between 1957 and 1969, before the Porter Cologne Act and the California Surface Mining and Reclamation Act of 1975. Only two of these require a Reclamation Plan (Q-53 for Kaiser and Q-76 for Lone Star, covering areas of 400 and 165 acres respectively). The Alameda County Surface Mining Ordinance does require operations conducted under Permits issued prior to January 1, 1976 to have an approved reclamation plan only "for that portion of the mining site on which surface operations have been conducted after January 1, 1976." The DEIR should state clearly how much surface area is exempt from the requirements to submit an approvable reclamation plan, and it should discuss possible means and proposals for reclamation of exempted areas.
3. It is not clear from the DEIR who, or what agencies or individuals, will be obligated to undertake mitigation measures and how implementation of such measures could and will be enforced. In this regard, we would heartily endorse the following recommendation made by Zone 7 of the Alameda County Flood Control and Water Conservation District:

What is needed is an institutional and financial arrangement between the major concerned parties that can carry on continued planning, financing and implement programs to mitigate impacts during the mining process and to finance and implement successful programs over the long term after mining is completed.



August 7, 1979

Our memo of May 17, 1978 (copy attached) which commented on the Notice of Preparation for the subject EIR pointed out the same need. Since the quarrying and reclamation will continue for about fifty years, the need for long range planning and implementation of programs is critical.

4. The Regional Board has issued NPDES Permits for surface discharges from the quarries. The staff has commenced investigations of the need for waste discharge requirements to control the impacts of existing and future quarry operations and land reclamation programs on local groundwaters. We propose to request each operator (or the joint operators) to submit a technical report which will quantify these impacts and include recommendations for their mitigation.
5. The DEIR letter of transmittal states that Alameda County intends to adopt a specific plan covering quarry reclamation in the 3820 acre area designated for such use between Livermore and Pleasanton. The scope of the EIR, as defined on page 2 (Section II.3) of the Draft is to be limited to consideration of impacts of only the "Reclamation Plan" and not the operations themselves; even though the operations are recognized as having significant impacts. Since the Valley's water resources require near-future protection from impacts of operations and reclamation impacts will be long-range, this approach is not realistic. In addition, even with respect to reclamation only, the DEIR does not address specific details of:  
1) physical facilities which may be required; 2) studies needed to evaluate the magnitude and significance of impacts; 3) costs (both capital and O. & M.) and sources of funds; and 4) "mechanisms" for planning and implementation of mitigation programs. It would be contraproductive to adopt an EIR which does not attempt to resolve these fundamental questions. The Reclamation Plan by Environ is, in my opinion, too general to serve as the basis for a specific county plan without further major supplementation.

The DEIR should not be adopted as the County's specific plan, because of the deficiencies discussed above. If a final EIR is adopted without resolution of our concerns, I will consider recommending further action to the Executive Officer, to ensure an adequate EIR. Please contact me or Steve Morse if you have any questions.

#### Attachment

cc: Alameda County Planning Commission  
399 Elmhurst Street  
Hayward, CA 94544  
Attn: Mr. Paul Deutsch

SAN FRANCISCO BAY REGION  
INTERNAL MEMO

File No. 2192.02 (AEO) DR

TO: DIVISION OF PLANNING & RESEARCH, FROM: GRIFFITH L. JOHNSTON, CHIEF  
ENVIRONMENTAL ANALYSIS SECTION DIVISION OF PLANNING STENOCH  
DATE: MAY 17, 1978 SIGNATURE: \_\_\_\_\_  
SUBJECT: NOTICE OF PREPARATION OF AN EIR  
#04217801—LIVERMORE-AMADOR VALLEY QUARRY RECLAMATION PLAN

We have reviewed the above notice of preparation for an EIR and believe the subjects identified below should be considered as part of the EIR.

In reference to your "List of Information Subjects for Environmental Documents", special attention should be given to discussing sections III A and III B 1 & 2 in the EIR.

The effects of the project on groundwater storage, movement, recharge and contamination potential; on water use; on surface water movement in Arroyo del Valle and Arroyo Mocho and on the quantity and quality of the surface water leaving the project area should be addressed in the EIR. Also a discussion of the proposed physical facilities as well as their operation, a maintenance should be included. A discussion and identification of the agency or agencies responsible for operating and maintaining the facilities as well as a projected operating budget and sources of funding should also be included in the EIR.

If you have any further questions please contact Adam Olivieri at 464-1357.

GRIFFITH L. JOHNSTON  
Chief, Division of Planning

**DIRECTORS**

FRANK BORCHI, JR.

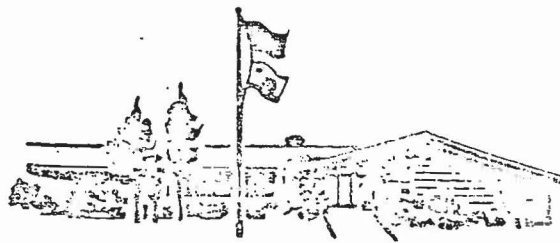
*President*

HARRY D. BRUGBAUGH

JOHN R. GOODES

CLARK W. REDEKER

CARL M. STRANSBERG

**ALAMEDA COUNTY WATER DISTRICT**

38030 FREMONT BOULEVARD

FREMONT, CALIFORNIA 94537

PHONE AC 418 757-1870

**OFFICERS**

STANLEY R. SAYLOR

*General Manager &  
Chief Engineer*

ROY E. COMETDALE

*Assistant General Manager  
& Auditor*

KARL T. R. NGAN

*Assistant Chief Engineer*

RUTH R. DYKES

*Secretary*

August 30, 1979

Alameda County Planning Dept.  
399 Elmhurst St.  
Hayward, CA. 94544

Attention: Mr. Paul Deutosh

Subject: COMMENTS ON DRAFT ENVIRONMENTAL IMPACT REPORT, LIVERMORE-  
AMADOR VALLEY QUARRY RECLAMATION PLAN

RECEIVED  
1979 AUG 31 AM 10:53  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

The Draft Environmental Impact Report on the Livermore-Amador Valley Quarry Reclamation Plan, July 10, 1979 has been reviewed. Potential water related impacts are the most important Alameda County Water District concerns. However, it is virtually impossible to evaluate the water supply and water quality impacts without the aid of an overall water management plan for the Livermore-Amador Valley. The evaluation deteriorates into a discussion of numerous possibilities depending on the extent of groundwater basin utilization.

The plan envisions quarrying until year 2030 which is a fifty year period. If the quarry operations dictate the groundwater operation and water levels during this period, the water supply agencies will be required to rely on other water sources for growth if needed. The ACWD service area is expected to be fully developed before 2030; therefore, it would not likely be a beneficiary of the future water operation in the quarry as stated on page 58. There is a possibility too that the Zone 7 service area will be fully developed by 2030 if environmental constraints on development remain in force in the Livermore Valley.

A study needs to be made of the water quality impacts of the plan during the 50 year quarrying period. There will be increasing evaporation losses with time from the area as shown on Table 12, page 25. This could cause an adverse salt balance with consequent serious degradation of the groundwater quality. A water management plan for at least the Amador Subbasin is needed to evaluate this potential problem. Water quality mitigation measures needed during the quarrying period could be determined after the evaluation is made.

Side slopes are discussed on page 32 of the report. ACWD experience with steep side slopes are that they tend to be unstable and they erode toward the property lines. In many instances, the pits are located adjacent to railroads, subdivisions or other high value improvements. Therefore, the District is trying to find ways of stabilizing the slopes; however, everything we have studied is expensive and most remedial measures would

reduce the percolation rates of the pits. As your report recommends, the slopes should be no steeper than 2 horizontal to 1 vertical.

ACWD is concerned that Livermore-Amador Valley groundwater levels may be allowed to rise to a level where poor quality groundwater will upwell and flow into Alameda Creek. This water would degrade the water quality in Alameda Creek which is used to recharge the Niles Cone groundwater basin. ACWD is opposed to such a condition because the Niles Cone is one of its primary sources of potable water. Projections of future water levels in the Livermore-Amador Valley ground water basins need to be made as part of a water management plan.

ACWD concurs with the plan to retain or construct a channel for Arroyo del Valle along the southern perimeter of the Quarry area. The channel should be sized to pass most of the flood flows rather than channel them into the pits. If the facilities required the flood flows to enter the pits, then the groundwater levels would no longer be under the control of Zone 7; they would be dependent on flows in Arroyo del Valle. This condition would increase the risk of high groundwater upwelling and flowing into tributaries of Alameda Creek which ACWD would oppose. Moreover, ACWD is planning facilities to divert flows up to about 1,000 cfs into its recharge pits in the Niles Cone which would be partially cut off if the Arroyo del Valle channel is undersized.

We appreciate the opportunity to comment on the report. If there are any questions, please contact us.



EARL L. LENAHAH  
Senior Engineer



# CITY OF PLEASANTON

AREA CODE 415 846-3202 -- 200 BERNAL AVENUE

P. O. BOX 520 PLEASANTON, CALIFORNIA 94566

1979 SEP -4 11 10:47

ALAMEDA COUNTY PLANNING DEPARTMENT

August 31, 1979

Paul Deutsch, Planner II  
Development Planning Division  
ALAMEDA COUNTY PLANNING DEPARTMENT  
399 Elmhurst St.  
Hayward, CA 94544

Dear Mr. Deutsch:

Thank you for referring the draft EIR on the Livermore-Amador Valley Quarry Reclamation Plan to us for comment. We understand the plan and EIR will be amended and further public hearings will be held, but we are submitting comments at this time in compliance with your request that they be received by September 1, 1979. We will probably have additional comments on the revised EIR.

Reference; p. 44, 3. Services/Utilities.

The assumption that few services are required for sand and gravel operations or for construction of reclaimed sites is erroneous. The existing sand and gravel operation requires a transportation system, streets, traffic signals, and traffic enforcement. These service requirements divert resources from other areas of the City and are provided and maintained at substantial cost to the community.

Under impacts, the statement that sand and gravel excavation and reclamation activities are self-contained and have little need for community facilities and services is erroneous. The further statement that financial support received through sales and property taxes from operations provides net benefits to community facilities and services without corresponding costs is entirely inaccurate. Evidently no consideration or study was given to the total affect of sand and gravel excavation on adjacent communities. The volume of truck traffic alone, one every 30 seconds on First Street, in terms of congestion, dust, noise, safety hazards, and accumulating roadway damage does have a cost to the community.

Reference; p. 61, Impacts associated with keeping ground waters low. The summary of impacts on the area for keeping groundwaters low and the more detailed discussion elsewhere in the report causes serious concern about the entire reclamation plan. Keeping groundwater levels low to facilitate extraction and reclamation and increase the cost savings to the quarry operators is offset by higher water costs to consumers, potential degradation of groundwater and increasing the potential severity of future droughts. While the benefit to the quarry operators may be substantial, public costs are unacceptable.

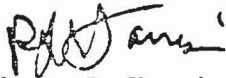
August 31, 1979

Paul Deutsch, Planner  
ALAMEDA COUNTY PLANNING DEPARTMENT  
Page 2

**Water Quality:**

Both Zone 7 of the Alameda County Flood Control and Water Conservation District and the Regional Water Quality Control Board have expressed concern about the impact of the reclamation plan on water quality. These concerns are important and shared by Pleasanton.

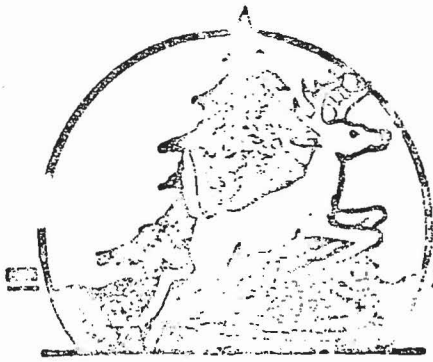
Yours truly,



Robert J. Harris  
Director of Planning &  
Community Development

RJH/gm

CC: City Manager



*Livermore Area*  
**RECREATION and PARK DISTRICT**

71 TREVARN ROAD, LIVERMORE, CALIFORNIA 94550

Phone: (415) 447-7200

GENERAL MANAGER

WILLIAM J. PAYNE

August 31, 1979

BOARD OF DIRECTORS

LOIS H. ELLSAESSER  
LESTER J. KNOTT  
MARLIN A. POUND  
ERNE RODRIGUES  
AYN WIEKAMP

Mr. Paul Deutsch  
Development Planning Division  
Alameda County Planning Department  
399 Elmhurst Street  
Hayward, Ca. 94544

Dear Mr. Deutsch:

We would like to take this opportunity to respond to the Draft Environmental Impact Report on the Livermore-Amador Valley Quarry Reclamation Plan.

While the Livermore Area Recreation and Park District boundaries encompass some of the Quarry Area, our main area of concern lies with our existing park, Sycamore Grove, located southeast of Vallecitos Road.

Sycamore Grove Park borders Arroyo Del Valle from Wetmore Road to the western boundaries of the U. S. Veterans Administration Hospital, covering roughly 365 acres. The park is open to the public for passive recreational activities, such as biking, hiking, horseback riding, picnicking and observation of the diverse plant and animal life. A Nature Area has been designated on the upper reaches of the park where the diversity of both plants and animals is especially unique. Many of the visual and ecological attributes of the park are dependent on the presence of water in Arroyo Del Valle. Fluctuations in the creek level can and have caused severe impacts on the life-cycles of the animal and plant populations in the park.

Because of the interdependence of the creek system and the recreational and educational opportunities offered by Sycamore Grove, the Livermore Area Recreation and Park District is concerned over the lack of quantified and qualified information on the short and long term changes in water flow which could occur during the project construction and after the project completion. Knowledge of this information will help us evaluate the impacts of the Reclamation Project on Sycamore Grove Park and recreational development in the area.

Thank you for addressing our concerns.

Sincerely,

*William J. Payne*  
WILLIAM J. PAYNE  
General Manager

WJP:am



EDMUND G. BROWN JR.  
GOVERNOR

# State of California

GOVERNOR'S OFFICE  
OFFICE OF PLANNING AND RESEARCH  
1400 TENTH STREET  
SACRAMENTO 95814  
(916) 445-0613

RECEIVED

1979 SEP -6 AM 11:46

ALAMEDA COUNTY PLANNING DEPT.

September 2, 1979

Paul Deutsch  
Alameda County Planning Dept.  
399 Elmhurst St.  
Hayward, CA 94544

Subject: SCH# 78050107 Livormore-Amedor Valley Quarry Reclamation Plan

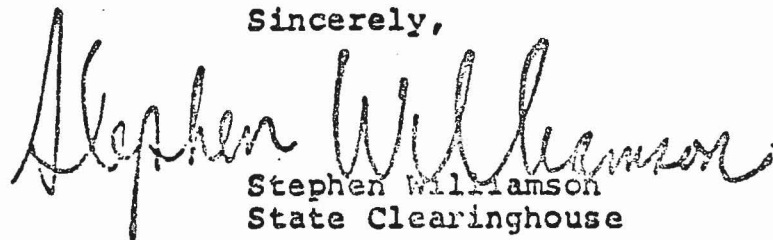
Dear Mr. Deutsch:

The State Clearinghouse submitted the above listed environmental document to selected State agencies for review. The review is complete and none of the State agencies have comments.

This letter verifies your compliance with environmental review requirements of the California Environmental Quality Act.

Thank you for your cooperation.

Sincerely,

  
Stephen Williamson  
State Clearinghouse

SVW/ag



**DIRECTORS**  
HARRY D. BRUMBAUGH  
*President*  
FRANK BORCHI, JR.  
JOSEPH G. DANAS, JR.  
CLARK W. REDEKER  
CARL N. STRANDSBERG



**ALAMEDA COUNTY WATER DISTRICT**  
38030 FREMONT BOULEVARD  
FREMONT, CALIFORNIA 94537  
PHONE AC 415 787-1670

**OFFICERS**  
STANLEY R. DAYLON  
*General Manager &  
Chief Engineer*  
ROY E. COVERDALE  
*Assistant General Manager  
& Auditor*  
KARL T. KNEAS  
*Assistant Chief Engineer*  
RUTH D. EVANS  
*District Secretary*

June 24, 1980

Alameda County Planning Department  
399 Elmhurst Street  
Hayward, California 94544

Attention: Mr. Paul Deutsch

ALTERNATIVE RECLAMATION PLAN FOR THE LIVERMORE-AMADOR VALLEY QUARRY AREA

RECEIVED  
JUN 25 AM 11:02  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

The Alameda County Water District is primarily concerned with the size of the proposed bypass channel around Lakes A and B.

The bypass channel needs to serve three purposes. These are: (1) to convey releases from the South Bay Aqueduct to ACWD; (2) to convey flood control releases up to 1,000 cfs to ACWD; and (3) to provide sufficient bypass capacity so that Zone 7 can control the water levels in the Livermore-Amador Valley groundwater basins.

The Arroyo del Valle serves as an alternative conveyance channel to the ACWD Vallecitos Channel for Imported State Water Project water. The South Bay Aqueduct turnout release capacities are 120 cfs at both Arroyo del Valle and Vallecitos. Therefore, the bypass channel should have 120 cfs as a minimum capacity if sized on this basis. This would also be adequate for ACWD summer releases of Del Valle water.

ACWD is planning a diversion structure capable of diverting flood flows up to 1,000 cfs into its recharge pits near Niles. This facility is tentatively scheduled for construction in 1987. The flood control releases are usually made from Del Valle Dam after the highest uncontrolled flows in Alameda Creek have passed. Therefore, the bypass channel should have about 1,000 cfs capacity to provide conveyance for these flows to the ACWD recharge Area.

ACWD is concerned that Livermore-Amador Valley groundwater levels could rise to an elevation where poor quality groundwater would upwell and flow into Alameda Creek. Lakes A and B even under Scheme I have combined storage capacities up to about 10,000 acre-feet. Under the plan, only 100 cfs of the flood control releases could be bypassed while these pits are filling. This

June 24, 1980

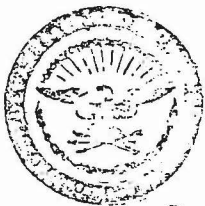
condition would force Zone 7 to take up to that volume of water even if they didn't need the water and it would prevent the larger flows from reaching the ACWD facilities where it may be needed. While the 7,000 cfs release capacity at Del Valle Dam may not be fully used due to infrequent flows that large, there is still a need for a channel capacity much larger than 100 cfs for this purpose.

These matters were also discussed in Mr. Lenahan's August 30, 1979 letter to you on the Draft Environmental Impact Report, Livermore-Amador Valley Quarry Reclamation Plan. The August 30, 1989 letter is hereby made a part of these comments.

Please contact us if you have any questions.

*Karl T-K Ngan*

Karl T-K Ngan  
Assistant Chief Engineer



DEPARTMENT OF THE ARMY  
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS  
211 MAIN STREET  
SAN FRANCISCO, CALIFORNIA 94103

SPNED-EA

RECEIVED

1980 JUN 20 11 10 49

To: Paul Deutsch  
Alameda County Planning Department  
399 Elmhurst St.  
Hayward, Ca. 94544

Date 18 June 1980

ALAMEDA COUNTY PLANNING  
DEPARTMENT

Subject: Alternative Reclamation Plan for the Livermore-Sanador Valley  
Quarry Area

Your request for comments from this office was received on 19 May 1980.  
by your (SPNED) (notice) dated 14 May 1980.

- ( ) The proposed activity is an administrative action and therefore will not require Department of the Army Authorization. However, any construction resulting from this action may require Department of the Army Authorization. For additional information please contact our Regulatory Functions Branch at 415-556-5966.
- (X) The proposed construction project (SPNED) (may) require Department of the Army Authorization under Section 10 of the River and Harbor Act and/or under Section 404 of the Clean Water Act. A copy of our pamphlet "U.S. Army Corps of Engineers Permit Program, A Guide for Applicants," (is inclosed) (~~which is being reviewed by the Regulatory Functions Branch~~). For additional information please contact our Regulatory Functions Branch at 415-556-5966.
- (X) The following Corps projects or studies may be impacted: Alameda Urban Flood Control Study - This proposal calls for reducing the surface area available for flood control storage beyond that used in the Alameda Urban Study report. This could severely impact on future structural alternatives for flood control. For more information on this matter please contact Ms. June Brevdy of our Planning and Reports Branch at (415) 556-8870.
- (X) Any impacts on wetlands, threatened or endangered species, other valuable fish and wildlife resources, and on cultural resources, are among the important environmental considerations for all Corps permit applications.

Thank you for including us in your review process.

CF: Proj File EIR/884 Review  
SPNED (Rdg file)  
SPNED-P (Brevdy )  
SPNED-E (Rdg file)  
SPNED-EA (Zaitlin )  
SPNCO-RE (Hall )  
SPNCO-RF  
SPDPD-R

*Rod Chisholm*  
Rod Chisholm  
Chief, Permit Impact Assessment Section  
Environmental Branch  
(415-556-5412)

**LAVWMA**

**LIVERMORE-AMADOR VALLEY**

**WATER MANAGEMENT  
AGENCY**

**RECEIVED**

JUN 30 AM 10:48

**ALAMEDA COUNTY PLANNING  
DEPARTMENT**

**A Joint Powers Agency**

- City of Livermore
- City of Pleasanton
- Dublin San Ramon Services District

June 25, 1980

Alameda County Planning Department  
399 Elmhurst Street  
Hayward, CA 94544

Attention: Paul Deutsch

SUBJECT: RECLAMATION PLAN FOR THE LIVERMORE-AMADOR VALLEY QUARRY AREA

Dear Mr. Deutsch:

The Livermore-Amador Valley Water Management Agency staff and engineers have reviewed the "Alternative Reclamation Plan for the Livermore-Amador Valley Quarry Area" prepared on behalf of the three major quarry operators in the Valley. The following are our comments:

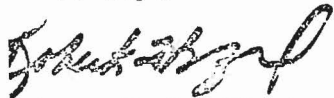
1. The "alternative reclamation plan" is, from our point of view, a great improvement over previous plans, in regard to degradation of the groundwater.
2. We remain concerned, however, over the implementability of some of the aspects of the plan as set forth in the document. Some of these concerns are specified in the attached letter from our consulting engineers, CH2M-Hill.
3. We are also not convinced that the concept of "free ion absorption" will actually result in water quality improvements.
4. Because of these and other concerns, we believe that a thorough and enforceable monitoring program must be an essential element of any permit granted the quarry operators for continued activities in the Valley.
5. We are concerned over the gravel companies' reluctance to engage in a joint, comprehensive monitoring program because of the possibility that cumulative impacts may exceed the apparent sum of individual impacts. We think it may be difficult for any regulatory agency to set meaningful parameters for the individual operators in this instance. We would encourage your agency to pursue the goal of a comprehensive monitoring program.
6. The major cities of the Valley, Livermore and Pleasanton, are studying the feasibility of engaging in wastewater reclamation and reuse for agriculture and landscape irrigation. Both this activity and the quarry reclamation plan would add TDS to the groundwater. We believe the County should take this public use of the groundwater table into account when considering a private enterprise use of that same resource.

Alameda County Planning Department  
June 25, 1980  
Page Two

7. The Regional Water Quality Control Board has not yet set a number as an acceptable limit for TDS levels in the Valley groundwaters. However, the public has a right to a quality of water in regard to taste and other domestic uses, as accustomed by present and historic levels of TDS and other contaminants, that might require a TDS level below that set by the Regional Board. We believe the County should take this quality issue into account when devising its monitoring program for the quarry operators' reclamation plan.

We would appreciate your bringing these concerns to the attention of your Board of Commissioners at the meeting of July 21, 1980 or any subsequent meetings when the quarry reclamation planning is being considered.

Sincerely,



Robert F. Bradford  
Manager

cc: LAWMA Board of Directors  
Lee Horner, City Manager, Livermore  
Jim Walker, City Manager, Pleasanton

Attachment



June 20, 1980

F11535.K0

Mr. Robert F. Bradford, Manager  
Livermore-Amador Valley Water  
Management Agency  
3505 Broadway, Suite 1024  
Oakland, California 94611

Dear Mr. Bradford:

We have reviewed the "Alternative Reclamation Plan for the Livermore-Amador Valley Quarry Area" dated April 1980 and find it to be consistent with the preliminary information supplied to us.

There are some concerns about its implementability which cannot be evaluated on the basis of information contained in the plan report. Some of these are:

- o Permeability of "impervious" dikes and material in the settling ponds, which are being relied upon to isolate the empty basins and "chain of lakes" from ground water.
- o Stability of these dikes and liners under the substantial uplift and lateral pressures which will exist if the sedimentation basins are, in fact, maintained dry.
- o The concept of water quality improvements by "free ion absorption."

In summary, the proposed reclamation plan appears to address the ground-water concerns raised earlier if the plan can be implemented as indicated.

Sincerely,

*Neal P. Dixon*

Neal P. Dixon, P.E.  
Department Manager  
Hydrologic Studies

sjs

COUNTY OF ALAMEDA

PUBLIC WORKS AGENCY

INTER-DEPARTMENT COMMUNICATION

DATE : JUNE 24, 1980

TO : BRUCE C. FRY, ASSISTANT DIRECTOR OF PLANNING

ATTN: PAUL DEUTSCH, PLANNER III

FROM : RONALD F. SORENSEN, CHIEF, ROAD DEPARTMENT *RFS*

SUBJECT: "ALTERNATIVE RECLAMATION PLAN FOR THE LIVERMORE  
AMADOR VALLEY QUARRY AREA"

The Alameda County Road Department has reviewed the subject document and requests that a north-south roadway concept, commonly referred to as "El Charro Road," be preserved in the final approved reclamation plan and that the southerly terminus of this roadway at Stanley Boulevard be coordinated with the City of Pleasanton.

RFS/OHK/jf

RECEIVED  
1980 JUN 25 PM 12:58  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

## DEPARTMENT OF FISH AND GAME

t Office Box 47  
Yountville, CA 94599  
(707) 944-2443



June 6, 1980

Mr. Paul Deutsch  
Alameda County Planning Department  
399 Elmhurst Street  
Hayward, CA 94544

Dear Mr. Deutsch:

Thank you for the opportunity to review the proposed Alternative Reclamation Plan for the Livermore-Amador Valley Quarry Area.

We concur that the Reclamation Plan can be the catalyst for promoting a major aquaculture industry at the quarry lakes. The lakes offer a significant potential for aquaculture. Such use would be compatible with the water management objectives of the area and should be encouraged.

The Reclamation Plan proposes major alteration of Arroyo del Valle channel. As you may be aware, the Department of Fish and Game has authority regarding the proposed streambed alteration. Operators will be required to submit notification of proposed channel modifications pursuant to Fish and Game Code Section 1603. Work cannot be initiated until streambed alteration agreements are executed.

We recommend your staff consult Mr. Robert Huddleston, Wildlife Biologist, at our Yountville office, telephone (707) 944-2443, regarding any questions concerning wildlife aspects of the plan. Mr. Keith R. Anderson, Associate Fishery Biologist, at our Menlo Park office, telephone (415) 326-0324, can provide assistance regarding fishery aspects.

Sincerely,

Brian Hunter  
Regional Manager  
Region 3

RECEIVED  
JUN 11 PM 1:29  
ALAMEDA COUNTY PLANNING  
DEPARTMENT



## DEPARTMENT OF WATER RESOURCES

CENTRAL DISTRICT  
32 STREET  
P. O. BOX 160088  
SACRAMENTO  
95816  
(916) 445-5631



RECEIVED  
1980 JUL 10 AM 10:40  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

JUL 9 1980

Mr. Paul Deutsch  
Planner III  
Alameda County Planning Department  
399 Elmhurst Street  
Hayward, CA 94544

Dear Mr. Deutsch:

We have reviewed the "Alternative Reclamation Plan for the Livermore-Amador Valley Quarry Area" which you transmitted with your May 14, 1980, letter. Our views on the "Alternative Reclamation Plan" also relate to the "Draft Environmental Impact Report for the Livermore-Amador Valley Quarry Reclamation Plan" prepared by Alameda County in July 1979.

The interests of the Department of Water Resources in commenting on the "Reclamation Plan" stem from the fact that the gravel mining areas in the Livermore-Amador Valley are situated in an important ground water aquifer. The Department serves water from the South Bay Aqueduct of the State Water Project to Alameda County Flood Control and Water Conservation District, Zone 7, which redistributes it for both direct delivery and ground water management and recharge. The District and the Department are considering a plan for utilizing the ground water basin for storage and water management to benefit both the District and the State Water Project Service Area as a whole. Thus, the Department is sensitive to proposed actions which may create conflicts of operational concepts such as those posed by gravel mining and the continued management of ground water resources.

The recent Alternative Reclamation Plan presents a different configuration of reclaimed land and residual water surface than that presented in the Draft Environmental Impact Report. However, we have questions about both the reclamation plan and the quarry operations.

Principally, we believe that the interim period between now and year 2030 should be divided into more frequent staging periods during the near term, and should include additional planning configurations for years 1985, 1990, and year 2000 with 10-year increments after that. Additionally, there should be more demonstration of the continued viability of the ground water basin as a resource to help serve the water needs of the Livermore Valley area (within prescribed water quality limits) for each of the time frames suggested above.

Mr. Paul Deutsch  
Page 2

JUL 9 1980

Although the 1979 Draft EIR and 1980 Alternative Reclamation Plans suggest the ground water resources operation capability will be enhanced or at least preserved under the final 2030 quarry configuration, this is not demonstrated by any routing studies through the chain of lakes or through the remaining aquifers. This should be done. We also believe that the near term configurations need much better definition of how the basin's capabilities will be continued during the 50-year mining period.

Some specific concerns on our part relate to the possible siltation of Lake "I" on the west side of the chain of lakes and the possible siltation of the western face and consequent reduction of infiltration capacity. Another is the use of Lake "K" for polluted water. What assurance is there that the lake will be totally isolated from the ground water?

It appears to us that the statement made on page 24 of the 1979 Environmental Impact Report is still valid:

"Ground Water Management in the valley is being investigated by Zone 7. The model developed by DWR can be modified and used. However, the hydrogeological data and the ground water models necessary for detailed ground water evaluations are not available. Requirements for flood protection in the valley are under study by the U. S. Corps of Engineers and have not been updated. Studies to conserve local storm runoff under future operation of the South Bay Aqueduct and future ground water management plans have not been completed. Detailed information on the cost and design of facilities needed to handle water in the plan area has not been provided nor does the plan provide information on possible institutional and financial aspects of implementing the plan."

While these may not be deficiencies in the "reclamation plan" as required by Alameda County, I believe they represent statements of need for studies which can serve as a foundation for a comprehensive plan for best utilizing the total water resources of the Livermore-Amador Valley, which can be compared with the economic base related to the gravel mining operation. Further, while we have not analyzed the impact, we believe that the fishery possibilities should be explored in connection with the gravel excavation ponds in the course of formulating an acceptable reclamation plan.

Since the aforementioned studies are incomplete, and we believe that the continued viability of the ground water resource in the basin is in doubt, we recommend that you condition final approval of the reclamation plan upon

Mr. Paul Deutsch  
Page 3

JUL 6 1990

completion within two years of the study to route water through the chain of lakes and the remaining aquifers for each time frame suggested above, and the satisfactory demonstration of the effectiveness of the plan in the near term as well as in year 2030.

Sincerely,

*Wayne MacRostie*

Wayne MacRostie, Chief  
Central District

cc: Mr. Hun J. Mar, General Manager  
Alameda County Flood Control and  
Water Conservation District, Zone 7  
1404 Concannon Boulevard  
Livermore, CA 94550

ADMINISTRATION BUILDING  
1062 South Livermore  
Livermore, Ca. 94550  
(415) 444-4400

RECEIVED  
JUL 18 PM 2:25  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

July 16, 1980

Mr. Paul Deutsch  
Alameda County Planning Department  
399 Elmhurst Street  
Hayward, Ca. 94544

Subject: Alternative Reclamation Plan for the Livermore-Amador Valley Quarry Area  
and Draft Environmental Impact Report-- Livermore Amador Valley Quarry  
Reclamation Plan.

Dear Mr. Deutsch:

The proposed Plan is an improvement over the original concept with the reduction in water. This would half the evaporation surface compared to the Plan proposed in 1977.

There are still two items that should be discussed in the Plan and E.I.R. These are - financial implementation and what happens to the ground water in the interim period the Plan is being developed. Concerning the financial implementation it would seem appropriate to discuss what the quarry operations and public agencies obligations would be prior to and after the year 2030. One means of assuring perpetual operation of this water management system would be a trust fund on tonnage removal from the quarries. Regarding the ground water it should be clarified how it will be handled between now and completion of the Reclamation Plan in 2030.

As we noted in our letter of August 24, 1979, we strongly endorse 2 to 1 slopes for the plan.

Very truly yours,

*Howard W. Nies*  
Howard W. Nies  
Director of Planning

EWN:gf  
cc: Planning Commission  
City Council

## CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

1111 JACKSON STREET, ROOM 6040

OAKLAND 94612

Phone: Area Code 415

444-1225

August 2, 1980

File No. 2192.02 (SLO)

Mr. Paul Deutsch, Planner III  
Alameda County Planning Department  
399 Elmhurst St.  
Hayward, CA 94554

RECEIVED  
AUG 11 35 PM '80  
ALAMEDA COUNTY PLANNING  
DEPARTMENT

Dear Mr. Deutsch:

Subject: Livermore-Amador Valley Quarry Reclamation Plan

We have reviewed the Alternative Reclamation Plan of April 1980, the quarries consultant's proposed monitoring plan of June 30, and the ACPD staff analysis of July 21. We have the following comments:

1. Alternative Reclamation Plan

- a. We find the alternative plan is substantially improved over the earlier plan. Based upon LAVWMA/CH2M-Hill's groundwater model analysis of May 12, it appears that the alternative plan has reduced water quality impacts to a level comparable to a fully mitigated quarry plan. (Ref: May 12 meeting and LAVWMA Phase I report, Figure 9-2).

While we find the LAVWMA/CH2M-Hill model less than perfect, it appears to be a reasonable management tool for decision-making at this time. However, we would expect that periodic review of model predictions vs. actual observations will be made (1.0-5 years), and that any superior model will be used, should it become available during the life of the project. This periodic review should be funded by the quarries because of their unique potential threat to groundwater quality. While the basin has been studied extensively (as stated on page 37), the results are not yet sufficient to provide complete assurance without periodic review at future years.

- b. We have yet to see any documentation of beneficiation of water quality by quarry operations as suggested on page 12.
- c. The Alternative Reclamation Plan still does not address the institutional measures (financing, management, operations, maintenance, etc.)

Paul Deutsch

(2)

Fred Dierker

needed between Zone 7 and the quarries; between the quarries themselves, and between the quarries and the County to assure that the Plan will be implemented.

## 2. Monitoring Plan

We have reviewed with Zone 7 the monitoring plan proposed by the quarries' consultant. We agree with Zone 7 that the proposed monitoring plan is inadequate to assess the impact of the quarries, especially on groundwater movements and water balance.

It is our understanding that Zone 7's review would recommend, in addition to the consultant's proposal, new monitoring consisting of (1) four additional wells on the east, to assess transfer between sub-basins, (2) a gaging station on the Arroyo Mocho or having Rhodes and Jamieson install outfall meters for discharges to the Arroyo Mocho, and (3) more detailed reporting from Kaiser. We also agree with Zone 7's proposal that they operate and collect the data from the wells and stream gaging stations as part of their routine monitoring program. We find this reasonable because it is Zone 7's responsibility to operate and manage the groundwater basin. Normally, routine monitoring site installation would also be their responsibility. However, the circumstances surrounding the quarries operations and their potential groundwater impacts would, it seems to us, necessitate that the quarries assume responsibility for the cost of installation of these special monitoring facilities. Zone 7 has indicated they would be willing to arrange for installation.

## 3. Staff Analysis - July 21, 1980

With the additional consideration of the above comments, the ACPD staff analysis of the issues adequately addresses our concerns at this time. We do wish to be involved in any further reviews or actions and we ask that you keep us informed of the progress of the Reclamation Plans.

If you have any questions, please call Steve Morse at (415) 464-0618.

Sincerely,

  
FRED M. DIERKER  
Executive Officer

cc: R. Karn, ENVIRON  
M. Mar, Zone 7

The adverse impacts identified in the EIR are stated below, each followed by the comment thereon including the response of the 1990 Alternative Reclamation Plan to such impact:

1. *About 1,300 acres of impermeable core would be placed in the center of the upper groundwater bearing zone. Mitigation is proposed as the heart of the Reclamation Plan in the "chain of lakes" concept, to maintain transmissivity of water, but at certain costs and with certain other impacts. (Section IV.C.3, p. 25.)*

Comment: The Alternative Plan increases the area of this impermeable core in the upper aquifer to 1,800 acres. This is a direct result of decreasing the water surface areas to mitigate the evaporative losses. Even though the surface area of the "chain of lakes" has been reduced, the concept is preserved and water can move across the valley in a manner similar to the historic conditions. At the present time there is an impermeable core with an area of 667 acres within the quarry area plus an additional 265 acres outside the quarry area that are the direct result of quarry operations that have proceeded in accordance with the quarry permits and under inspections and reviews by the County of Alameda. A Zone 7 report entitled "Arroyo del Valle Recharge Investigation, E.W. Cummings, September 1979" concludes that "The Arroyo del Valle's natural recharge capability has been reduced by over 50 percent since the 1920's." Under present conditions Zone 7 maintains percolation volume in Arroyo del Valle by utilizing the Del Valle Reservoir for storage and regulation of releases. Zone 7's ability to operate in this manner is the result of an agreement with the State Department of Water Resources to use space in the Del Valle Reservoir that is not presently needed for regulation of South Bay Aqueduct water. As demands on the South Bay Aqueduct increase, Zone 7 will no longer be able to maintain percolation volumes by this method. The "chain of lakes" will provide an alternative method of managing water flow by filling the gravel pits during periods of excess water. The capacity of the "chain of lakes" is 66,000 acre-feet. There are costs associated with the present operational procedures: storing, transporting and percolating the local and imported water. The EIR points out that there will be costs associated with the operation of the "chain of



lakes". When the authority to use the Del Valle Reservoir terminates, the "chain of lakes" can be used to replace that operational deficit and the costs presently associated with using the regulatory capacity of the Del Valle Reservoir and with percolating operations can be shifted to be used for operating the "chain of lakes", which has greater flexibility in groundwater management than Del Valle Reservoir.

\* \* \* \* \*

2. *Increase in water use primarily due to evaporation from proposed lakes. Some mitigation occurs via the increase in storage capacity available, but with impact of increased costs to make use of capacity. (Section IV.C.3.b.(2) and (3).)*

Comment: The Alternative Plan reduces the water surface areas in the quarry area from the previously projected 2,160 acres to 1,251 acres. Of the latter area, 90 acres (Lake J) are proposed to be added to the lake in Shadow Cliffs Park and will be used for recreation purposes. An additional 44 acres (Lake K) is isolated from the "chain of lakes" and the groundwater and may not have any water standing in it unless it is used for water management purposes. The maximum area of the "chain of lakes" is therefore 1,117 acres, 52 percent of the water surface area in the original reclamation plan. The evaporation from this 1,117 acres is estimated to be approximately 3,900 acre-feet annually. The present annual water use of the 4,200-acre reclamation plan area was estimated to be 9,700 acre-feet annually (EIR, Table 12, p. 25). Under the Alternative Plan, the same area will use 9,800 acre-feet annually if the same unit uses of water are assumed to be applied to the land.

Table 12 on page 25 of the EIR should be revised as follows:

Table 12

ANNUAL WATER USE\* IN RECLAMATION PLAN AREA OVER TIME

	1976		2030	
	Area (acres)	Water Use (acre-feet)	Area (acres)	Water Use (acre-feet)
Undisturbed area	2,100	4,200	900	1,800
Disturbed area	1,100	2,000	2,100	3,800
Water area	1,000	3,500	1,200	4,200
TOTAL	4,200	9,700	4,200	9,800

\*Loss to area



The annual water use after the quarries cease operations in 2030 will be 100 acre-feet greater than in 1976, under the assumptions used in the EIR. This is essentially equal within the accuracy of forecasting.

Using other scenarios for comparison leads to similar conclusions. If the quarries were not in existence and the reclamation area were developed to urban use, the water use would be 9,200 acre-feet annually. If the same area were used for irrigated agriculture, the water use would depend on the crop and could range from 4,200 acre-feet to 16,800 acre-feet annually.

Throughout the EIR the term "water use" is implied to be "water loss". This is not true. If the water is put to beneficial use, it is not lost; it is used. A lake that is used for recreational purposes is subject to evaporation. The water that is so "lost" should be considered as beneficially "used". The same logic can apply to water evaporated from a conservation reservoir, or to stream flow to recharge the groundwater, or even to fish, wildlife and open space areas. If the use is considered to be beneficial, the water "lost" from evaporation should be considered as beneficially "used". This point is even more obvious when the water is used for aquaculture. There a product - fish - is grown and used to supply human needs for food.

- \* \* \* \* \*
8. *Increased cost of transmitting water through the Quarry Area for operation and maintenance of necessary facilities. Can be mitigated by requiring an operating fund to be set up by the quarry operators. (Sections IV.C.8.3.(?) and IV.D.11.)*

Comment: The reply to this impact has already been addressed under impact number 1. The use of the "chain of lakes" by the water management agency (presumably Zone 7) will provide a substitute for the Del Valle Reservoir and the present method of recharging the groundwater. There are costs associated with the storage, transportation and recharging of water. Those present operating costs can be transferred to operation of the "chain of lakes". There is no need for an operating fund.

\* \* \* \* \*

4. *Potential degradation of water quality due to low inflow in relation to high evaporation rates. Salts may build up in the lakes. Some mitigation available if water flow is increased for any reason, e.g., flood flow control or conservation use. (Sections IV.C.3.b.(6) and IV.C.3.c.(1).)*

Comment: Zone 7 has requested the quarry operators to provide a flow capability of 10,000 acre-feet annually through the quarry area based on the Zone's calculations that the upper aquifer has historically transmitted that quantity of water from east to west. If that amount of water is introduced into the "chain of lakes" at the Arroyo del Valle, with an average total dissolved solids (TDS) of 230 milligrams per liter (mg/l) (EIR, Table 9, p. 21) it will result in a quantity of 6,300 acre-feet with a water quality of 371 mg/l TDS by the time it percolates into the ground at the west face of Lake I. The comments on impact number 2 address the water quantity. The present water quality in the quarry lakes is 450 mg/l TDS. The historic water quality in the area was approximately 350 mg/l TDS. Therefore, the water quality of the basin will improve over what presently exists, but it will be of slightly less quality than the historic quality. However, if Zone 7, as the water management agency, does not choose to use the groundwater basin and does not percolate water annually and pump it from the west end for municipal use, the quarry lakes will not circulate and the salt concentrations will build up. The degradation of the water quality from historic levels has been due to many factors, not evaporation from the quarry lakes. Many of those factors will still be in existence when quarrying has terminated in 2030. For example, one source of high salt concentrations in the groundwater has been from the very saline groundwater located north of the main groundwater basin. When the main basin has been pumped down to a low level, as it has during the past several decades, these saline waters (some in excess of 1,000 mg/l TDS) flow down into the main basin and degrade the basin. The Alternative Plan has addressed this problem by providing for an earth fill barrier along the northern and eastern perimeters of Lakes E, F, G, H and K to prevent the incursion of these waters into the chain of lakes. These barriers will help Zone 7 control the flow of groundwater through the upper aquifer and will provide additional flexibility to the water management program. Additional local water can be conserved by diversion into the lakes.

Zone 7 has an application for water rights for diversion of surplus waters from Arroyo Mocho and Arroyo las Positas. Some diversions have been made under this 1957 application and the "chain of lakes" will provide the capability for more.

- \* \* \* \* \*
5. *Potential degradation of water quality due to exposure to atmosphere, human contact, potentially polluting development of land areas. Mitigation can be accomplished by establishing buffer strips around basins, limiting human contact in critical areas, and controlling land uses to minimize possibility of pollution. (Sections IV.C.3.b.(6), p. 30, and IV.C.3.c.(3), p. 32.)*

Comment: As noted in the EIR, the potential for degradation due to human factors can be mitigated by establishing buffer strips around the lakes and by limiting human contact in critical areas. The Alternative Plan includes this mitigation. Buffer strips around the lakes are included. The only lake proposed for direct human contact is Lake J which is an adjunct to Shadow Cliffs Park. Land use controls on adjacent areas can be imposed to minimize the potential for pollution in the "chain of lakes".

- \* \* \* \* \*
6. *Potential for siltation in water storage facilities if water is diverted into basins. Mitigation can be accomplished through construction of desilting basins. (Sections IV.C.3.b.(6), p. 30, and IV.C.3.c.(4) and (6), p. 34.)*

Comment: Surface water flowing in the Arroyo del Valle is already partially desilted by flowing through the Del Valle Reservoir. This reservoir has a silt pond capacity of 5,000 acre-feet. Additional capacity could be reserved in the bottom of those lakes close to Arroyo del Valle (particularly Lakes A and B). In addition, Lake K has been provided to capture local waters from Arroyo Mocho. Polluted runoff from the upstream urban areas can be directed to Lake K and either stored or treated before being introduced into the "chain of lakes" and percolated into the groundwater. The stream system of the valley is still operable under the Alternative Plan. Water that is undesirable due to heavy silt loads or other pollution does not have to be directed into the "chain of lakes" and can be allowed to flow downstream and out of the basin.

7. *Increase in complexity of managing the groundwater basin, which is mitigable. (Section IV.C.3, p. 9, and IV.D.11, p. 57.)*

Comment: Under historic and present conditions, management of the groundwater basin is complex. The Reclamation Plan, particularly the Alternative Plan, provides a tool which will enable the water management agency to have greater flexibility in managing the groundwater basin. Local waters that would otherwise waste to San Francisco Bay can be conserved by diversion to the lakes under existing water rights applications. The construction of the impervious dikes along the northern and eastern sides of Lakes E, F, G, H and K will permit the control of groundwater flow from the east and north. Different water levels could be maintained on either side of this barrier. Instead of making the groundwater basin more complex to manage, the Alternative Plan increases the flexibility and decreases the complexity.

\* \* \* \* \*

8. *Possible loss of recharge and percolation areas due to impervious surfaces from development and loss of natural stream channels. Direct mitigation is possible if development is limited and if replacement channels are designed to allow percolation. Indirect mitigation is possible if available increased storage capacity is utilized. Either mitigation concept involves increased costs. (Section IV.C.3.b.(5), p. 29.)*

Comment: The Zone 7 Report on "Arroyo del Valle Recharge Investigation" indicates that the natural recharge capability of the stream has already been substantially reduced. The effective areas of percolation in the stream are located downstream from the present quarry area, and the Alternative Plan will not affect that portion of the stream. The Plan includes the construction of a low-flow channel with a capacity of 100 c.f.s. which can be used to transmit water around Lakes A and B into the downstream Arroyo del Valle. Present releases from Del Valle Reservoir for percolation in Zone 7 and transportation to Alameda County Water District are less than 100 c.f.s. The loss of percolating capacity of the natural stream channels as they exist today will be more than offset by the increased capacity of the lakes. The loss of percolation due to impervious surfaces from development would be even greater if the quarry area were developed for urban uses. The costs related to possible operation of the quarries for water management purposes are discussed in other sections of this report. Such costs would be attributable to the water management program, not to the quarry operations.

\* \* \* \* \*

9. Increased safety hazard, difficulty of maintenance and access, potential for siltation, and limiting of potential land uses due to proposed 1:1 slopes. Mitigation would occur under the County Surface Mining Ordinance, which requires 2:1 reclaimed slopes unless demonstrated not to be necessary or desirable. (Sections IV.C.3, p. 9, IV.C.3.c.(2), p. 52, and IV.D.1, p. 41.)

Comment: As noted in the EIR, the question of stability of slopes will be subject to review in accordance with the County Surface Mining Ordinance. This will be done with each individual plan as it is submitted to and reviewed by the County. It is proposed to provide maintenance access spaces along all permanent dikes and around the perimeter of the quarry area. These access areas could be used for maintenance, safety and emergency access. It is not proposed to open any areas to public access except through expansion of Shadow Cliffs Park and through the establishment of a trail along the Arroyo del Valle. The expansion of Shadow Cliffs Park would be only in lake area. No additional beach areas are anticipated.

10. Although mining will result in loss of riparian habitat along Arroyo del Valle, no consideration is given in the reclamation plan to replacement of riparian and wildlife values. Some mitigation will occur through natural processes. Significant mitigation could be achieved through design and landscaping of the proposed replacement channel. (Section IV.C.4, p. 39.)

Comment: Through the quarry area Arroyo Mocho is already a man-made channel and has little riparian value. The area of Arroyo del Valle within the quarry area has already been partially quarried and the only significant riparian growth occurs downstream from the quarry area. This portion of the stream will not be disturbed further. Considering the above, it is difficult to see how the reclamation plan as proposed will have negative impacts on riparian habitat. The provision of the low water channel in Arroyo del Valle will assure that low water flows will continue downstream and will feed the riparian habitat in Shadow Cliffs Park and beyond.



11. Possible abandonment of reclamation concept if costs become too large or if gravel companies, for whatever reasons, do not construct facilities. The Reclamation Plan depends on close cooperation of all three operators and could be jeopardized if this cooperation is not maintained over the decades. The Plan would also be jeopardized if one or more of the operators abandoned mining prior to affectation of the Plan. Abandonment of concept would hinder effective reclamation of Quarry Area and could generate significant impacts on land and water resources. Mitigation could be accomplished by requiring that a fund be built up sufficient to guarantee execution of the concept as adopted during the active mining period, e.g., that in the year 2030, physical facilities will be in place. Estimates of construction costs would be necessary. (Sections IV.C.3.b.(7), p. 31, and IV.D.11, p. 57.)

Comment: The Reclamation Plan is designed to permit each operator to extract and process his materials as an independent operation. This is required in order to maintain the competition necessary to meet federal regulations and anti-trust laws. Once the Master Reclamation Plan has been approved, each operator must submit a separate detailed plan to the County to define his portion of the Master Plan in specific terms. If each stage is constructed in sequence as shown on the plan the total Plan will be completed within 50 years. Cooperation between the operators can be effected by the County acting as the regulatory body through the Quarry Ordinance which requires County review every five years. The reclamation plan will be developed with each ton of gravel that is extracted and shipped from the quarry. Assurance that each operator will extract his gravel and place his silts and overburden materials in the manner set forth on the master plan and his specific plan can be provided by the posting of bonds with the County and by regular inspections by the County Building Inspector. The Quarry Ordinance requires review every five years by the Planning Commission and the bond for the next five-year period can be based on what is proposed for that period. Failure to conform to the plan could be cause for termination of the permit. The Livermore-Amador Valley is the major source of aggregates in the Bay Area and all other sources will be exhausted before the end of the 50-year period. It is highly unlikely that these quarries will be abandoned. Conformance can be assured by continuing inspection, periodic review and bonding.

As a practical matter, the Reclamation Plan is an ongoing function of the mining operation. Reclamation on this scale cannot be achieved if separated from the mining. Collecting a fund to assure conformance is not a substitute for diligent inspection and continual enforcement by the County.

12. Possible inworkability of concept due to lack of geologic and hydrologic information concerning certain assumptions made, resulting in possible loss of great public benefit if multipurpose use of facilities is not undertaken. Mitigation: studies to determine specific type and size of facilities needed to maintain water movement and quality would be needed and could be performed in connection with studies to expand the geohydrologic data base and to determine feasibility of multipurpose use. To mitigate cost impacts gravel companies would bear a portion of these studies attributable to Reclamation Plan implementation. (Section IV.C.3.b, p. 22, IV.C.3.c.(4), p. 33, and (5), p. 35, and IV.D.11.)

Comment: The basic concept of recharging the groundwater basin in the manner described in the Reclamation Plan is not new. The same techniques have been used extensively throughout the West. In this immediate area, Alameda County Water District has purchased several completed quarries in the Niles Cone and has undertaken an extensive groundwater recharge program by diverting local runoff and South Bay Aqueduct water from Alameda Creek into these pits. The District, which supplies the majority of its users from groundwater, has successfully waged a battle against salt water intrusion using the gravel quarries as groundwater recharge basins. Zone 7 began recharge of South Bay Aqueduct water on the Rhodes-Jamieson property in 1962 and currently recharges by releases into the stream beds. While additional studies may be needed to fully understand the groundwater basin, this knowledge is not necessary to operate the quarries or develop the reclamation plan. The responsibility for the studies that enhance our knowledge rests with the public agencies that manage and control the basin. As more knowledge is obtained, the plan can be modified to take advantage of that new knowledge. The basin has been studied since the turn of the century - extensively during the past 30 years. All present "state of the art" knowledge indicates this proposal will work.

18. Feasible abandonment of concept and possibility of operation contrary to the best public interest, assuming lands will remain in private ownership. Mitigation can be accomplished by assumption by the appropriate public agency(ies) of direction, construction and operation of the mitigation facilities, management and use of the facilities to effectuate a water management plan, access to all facilities for inspection and maintenance, management and use of the groundwater resources in the area maintained from the natural state with respect to quantity and quality, and the use of the basins (if shown feasible) for multipurpose water resource management. A fund should be made up to ensure operation and maintenance expenses will be available for costs of mining mitigation operations, if conducted by a public entity, after the year 2030. (Sections IV.C.3.5.(7), p. 31, and IV.D.11, p. 37.)

Comment: The Reclamation Plan is subject to review by the Planning Commission every five years. It is assumed that Zone 7 and other agencies interested in the groundwater basin will have an opportunity to comment on the Reclamation Plan as it develops during the mining operation. Modifications to the plan can be incorporated. It is not the intention of the gravel companies to "operate" the Reclamation Plan. It is the responsibility of Zone 7 to manage and operate the groundwater basin. The lands are now and will remain in private ownership during the life of the quarries. If it is determined to be in the public interest, a public agency can exercise its powers of eminent domain and acquire the quarries. Or the public agency can wait until the quarrying has been completed and acquire the land for a fraction of its present value as did Alameda County Water District in the Hiles quarries. Conformance with the approved Reclamation Plan is ensured by proper inspection and enforcement by Alameda County under the provisions of the Quarry Ordinance. A fund is unnecessary.



10. A distinct set of impacts is associated with keeping Lasin groundwater levels low enough to as not to interfere with "economically viable extraction" of sand and gravel, as called for in the Plan, including:

- loss of storage capacity of the groundwater basin during the mining period
- loss of currently available water at cheaper rates
- loss of hedge against drought
- increased energy consumption necessary for increased pumping
- possible salt intrusion in the basin
- curtailment of groundwater management options
- loss of opportunity to fill basin if State Water Project water becomes short in future years

This issue relates to mining, not reclamation, but is recommended as part of the operators' Reclamation Plan, and consequently discussed in the EIR. (Section IV.C.3.b.(4).)

Comment: Many of these impacts will result from maintaining a lower groundwater table. However, they are not major impacts having long or permanent effects. The alternative of filling the basin and flooding out the quarries would terminate these operations and would prevent the implementation of the Reclamation Plan. This Reclamation Plan not only mitigates the impacts of future mining operations, but also mitigates impacts which may have occurred in the past during mining operations conducted in accordance with County permits. The Plan also offers many new features that enhance the capability to manage the groundwater basin. These would all be lost if the quarry operations ceased. The major deposit of construction aggregates in the Day Area would be unharvested. A major industry with large employment and a beneficial financial effect on the community would be terminated.

15. The Plan also is that the only considerations which would limit future land uses on reclaimed land areas are proximity to ongoing mining, geology, and structural conditions. Impacts on future public plans, policies, and environmental quality could occur. Mitigation is possible through recognition in the Reclamation Plan and Implementing Specifics Plan that open space and mining-related industrial uses are most appropriate uses based on present knowledge until it can be demonstrated that more intensive uses would be consistent with public plans, policies, or environmental quality applicable at such future times. (Section 17.D.1.)

Comment: None.

The EIR also identified seven positive impacts as indicated in the EIR summary. These are acknowledged. In addition there are several other major positive impacts that were not identified. They can be summarized as follows:

8. The "reduction" in Arroyo del Valle's natural recharge can be offset by the use of the "chain of lakes" and the recharge into the west face of the quarry area.
9. The Reclamation Plan can be a major tool used to manage the groundwater basin and can be constructed under the review of the County of Alameda at no cost to the County. Even the costs of the periodic inspections and reviews will be borne by the quarry operators.
10. The storage capacity of the "chain of lakes", which exceeds the natural groundwater capacity of the Quarry Area, can be used to replace the storage capacity of the Del Valle Reservoir lost to Zone 7 when the State needs more storage for South Bay Aqueduct regulation.
11. The Reclamation Plan can be the catalyst for a new industry in Alameda County - aquaculture.

## SECTION I

### COMMENTS ON RESPONSES RECEIVED

- A. The response of Kenneth R. Manneman, CWR, water resource consultant to Alameda County for this project, is acknowledged. His comments represent corrections and clarifications of the Draft EIR text and are hereby incorporated into the text.
- B. The response of Alameda County Mosquito Abatement District is acknowledged. The technical correction concerning the presence of malaria mosquitoes in Alameda County is hereby incorporated into the EIR. No further comment on the response appears necessary.
- C. The response of Alameda County Health Care Services Agency is acknowledged. Their concerns relate to recreation use of reclaimed areas, particularly lakes. Under the Alternative Plan, the only area proposed for recreational use is a lake to the east of Shadow Cliffs Park which would be an extension of that park. Management by East Bay Regional Park District would assure that appropriate measures and plans would be undertaken to avoid health and safety problems. Other lake areas would be used solely for water management or fish farming.
- D. The response of Aqua Nova Fisheries is acknowledged. Their letter presents details of fish farming. Fish farming is a potential use for reclaimed lake and supporting land areas and is considered an agricultural operation. A study of relationships between fish farming requirements and water management requirements would be necessary prior to committing significant areas to fish farming use.
- E. The response of Mun J. Mar, General Manager of Zone 7, Alameda County Flood Control and Water Conservation District, is acknowledged. The response presents Zone 7 staff thinking at that time about details of implementing and financing the reclamation plan. Whatever the details, the Draft EIR's emphasis on the necessity for providing implementing mechanisms and financial guarantees and agreements still holds. As predicted in the last paragraph of Mr. Mar's letter, smaller water surface areas are now being proposed in the Alternative Plan, which was developed in late 1979-early 1980 by the quarry operators with the assistance of Zone 7.
- F. The response of the City of Livermore is acknowledged. Comments on their responses:

"More consideration should be given to reducing the evaporation rate of (sic) reduction of water areas."

Comment: This has been accomplished in the Alternative Plan.

"We strongly endorse the installation of 2 to 1 slopes rather than 1 to 1, as suggested by the reclamation plan. Adequate roadway widths should also be provided to service the shore areas of the lakes."

Comment: Unless steeper slopes are demonstrated adequate under specific soils and geologic studies, 2:1 slopes will be established under the Alameda County Surface Mining Ordinance. We concur with the need to establish adequate roadway widths; this could be accomplished as a policy statement in the Specific Plan (master plan) and/or for each lake in the individual operators' reclamation plans.

"The EIR should be further developed as to how the plan will be implemented, both in the interim and after mining is complete. We are particularly concerned that the responsibilities be clearly stated in the EIR as to what the operators' and governmental agencies' responsibilities will be concerning the establishment and maintenance of the creek."

\* Comment: Final details of operators' vs. public responsibilities concerning reclamation must be worked out by the decision-making entities involved, in this case the Planning Commission and Board of Supervisors, with input from Zone 7 and all other interested entities. The duty of the EIR in this respect is to point up the importance of the issue and note the impacts which would result from various alternatives. The Draft EIR contains discussion of the issue and, as noted in the letter from the Department of Water Resources, reproduced elsewhere in this addendum, that discussion remains valid. As of this writing, the operators are in continuing discussion with Zone 7 (the most obvious agency to manage the reclamation water facilities) as to which parts of the Alternative Plan constitute mitigation of mining damage to water resources (operators' financial responsibility) and which constitute "enhancement of water management capabilities" (which, according to the operators, would be Zone 7's financial responsibility).

Implementation of the master plan will be required through adoption of reclamation plans for each of the operators for their entire area. Based on other recent County reclamation plan approvals, reclamation will be tied to the mining operations. An annual report will be required showing status of mining and reclamation. A bond, or surety, will probably be required to guarantee reclamation, provide for contingencies, carry out studies necessary to assure success of the plan, monitor water quality and quantity, and to operate and maintain mitigation facilities.

Measures will also be required to assure continuing coordination among the operators to the extent needed to make an overall plan work.

- G. The response of the California Regional Water Quality Control Board, San Francisco Bay Region, is acknowledged. Their response consists of a letter to the County Planning Commission over Fred H. Blomquist's (Executive Officer) signature, dated August 29, 1970; an Internal Memo dated August 7, 1970 from R.R. Scholer to John H. Huddleson, and an Internal Memo concerning the Notice of Preparation of the Draft EIR from Griffith L. Johnston to Division of Planning and Research, dated May 17, 1970. Comments follow:

"The subject Draft EIR (DEIR) is inadequate and should not be adopted as the County's specific plan because of . . ."

Comment: The Draft EIR is a document intended, under the California Environmental Quality Act, to inform decision-makers of the significant effects of a project on the environment, to identify alternatives, and to identify mitigating measures to reduce or avoid the impacts. It is a document apart from the specific plan. It is not intended to resolve issues; that is the responsibility of decision-makers.

"...the following deficiencies: 1. It does not quantify impacts of the existing quarry operations on groundwater quality."

Comment: Analysis has been performed by CH2M Hill, consultants to Livermore-Amador Valley Water Management Agency (LAVWMA), which indicates only slight

degradation of groundwater quality, projected to 2030. Three charts produced by CH2M Hill are reproduced in Section II of this Addendum. The first, "Old Quarry Reclamation Plan/Projected Ground Water Quality" forecasts a significant rise in TDS in the Arroyo Valle subbasin (in which the quarries are located) from 350 mg/l in 1980 to 525 mg/l in 2030. The second chart, "New Quarry Reclamation Plan/Projected Ground Water Quality," indicates only a moderate rise in TDS from about 350 mg/l in 1980 to 395 mg/l in 2030. The third chart, "Project Ground Water Quality/No Mine, Mitigated Quarries, Low SBA Recharge (6000 AF/YR)," which assumes a quarry scenario equivalent to one in which no mining occurred, shows TDS remaining virtually constant at 350 mg/l from 1980 to 2030. The RWQCB, in their letter of August 2, 1980 commenting upon these results, notes that water quality impacts under the Alternative Reclamation Plan are comparable to those of a fully mitigated quarry scenario. Thus, what was previously a deficiency in the DEIR according to RWQCB has been addressed to their satisfaction.

It must be recognized that the CH2M Hill Study is based on a very crude model with many limitations, even though it does represent best available information. Refer to Section II of this addendum for further discussion of their study in the context of future studies necessary to validate the Alternative Reclamation Plan with respect to water quality and quantity.

"...I question the statement in your staff's report... that adverse impacts primarily concern water resources and appear to be mitigable."

Comment: The statement is misleading and was excised at the public hearing of August 27, 1979.

"The DEIR must include specific data on impacts of the project on: groundwater quality, storage, movement and recharge; surface water quality and quantity in Arroyo del Valle and Arroyo Mochos; and quality and quantities of surface waters leaving the project area."

Comment: Projections of groundwater quality have been made by CH2M Hill and discussed above. Projections of quantity have also been made and are reprinted in Section II of this Addendum. Under the old Plan, groundwater elevations were predicted to rise generally to about the year 2000, then decline (to about 225' in the Arroyo Valle (quarry) area). Under the Alternative Plan, levels are predicted to rise before levelling off around 2015, with a predicted level of about 315' in the quarry area. In a fully mitigated quarry scenario, levels would rise before levelling off in 2010 to a somewhat higher level still (about 340' in the quarry area).

"The DEIR should state clearly how much surface area is exempt from the requirements to submit an approvable reclamation plan, and it should discuss possible means and proposals for reclamation of exempted areas."

Comment: The Specific (master) Plan to be adopted by the County covers reclamation of all lands areas in the Quarry Area regardless of when mined, as an integral concept in coordinated reclamation. The Plan could not work without providing for all areas to be accounted for. While technically under the law areas mined prior to 1976 do not need reclamation plans, the type of impacts occurring because of mining in the Quarry Area cannot be mitigated unless these areas are brought into an overall reclamation scheme. The Staging Plans reflect these facts, in that they show all areas in the reclamation scheme. Reclamation plans to be submitted by the operators pursuant to the Specific (master) Plan adopted by the County will also deal with the whole area of operations.



"It is not clear from the DEIR who, or what agencies or individuals, will be obligated to undertake mitigation measures and how implementation of such measures could and will be enforced."

\* Comment: The DEIR did not answer these questions clearly because the Reclamation Plan submitted by the quarry operators did not discuss these matters clearly. The DEIR did point out that this was a shortcoming in the plan which would have significant impact (see, for example, adverse impacts 10, 11, 12, and 13 in the DEIR Summary). The quarry operators are clearly responsible for the planning, cost, and implementation of measures to mitigate impacts of quarrying and impacts of the reclamation plan. It has been assumed that eventual operation and maintenance of physical facilities, and participation in future studies, would be most logically undertaken by Zone 2, as the agency with the broadest powers and responsibilities for the Livermore-Amarador Valley's water resources. The cost of the operation and maintenance, and the cost of studies, is the responsibility of the quarry operators to the extent O&M and studies relate to mitigation of their operations. We concur that institutional and financial arrangement is needed among the major concerned parties for planning, financing, and implementing programs to mitigate impacts during the mining process and after mining is completed. Earlier in the period of reclamation planning, it was suggested that some sort of committee or joint-powers group be formed. Alternatively, the concerns may be addressable through existing powers and procedures, with refinement and details to be specified in the Specific (master) Plan. Under the Alameda County Surface Mining Ordinance, reclamation plans are required to be reviewed every five years. Many concerns about future impacts can be addressed in those reviews as knowledge about the Valley's water resources, impacts of mining, and progress of reclamation improves.

"The scope of the EIR, as defined on Page 2 (Section 11.3) of the Draft is to be limited to consideration of impacts of only the 'Reclamation Plan' and not the operations themselves; even though the operations are recognized as having significant impacts. Since the Valley's water resource require near-future protection from impacts of operations and reclamation impacts will be long-range, this approach is not realistic."

Comment: Supplemental information is being presented in this addendum which addresses mining impacts on water resources. Mitigation of near-term impacts could be accomplished through requiring the operators to provide more frequent near-term staging plans indicating how surface and ground waters would be affected during various stages of mining. Refer to the latter response of the Department of Water Resources and comments thereon.

"...even with respect to reclamation only, the EIR does not address specific details of (1) physical facilities which may be required; (2) studies needed to evaluate the magnitude and significance of impacts; (3) costs (both capital and O&M) and sources of funds; and (4) "mechanisms" for planning and implementation of mitigation programs. It would be counterproductive to adopt an EIR which does not attempt to resolve these fundamental questions. The Reclamation Plan by Environ. Inc. too general to serve as the basis for a specific county plan without further major supplementation."

Comment: The DEIR was written to discuss impacts of the Reclamation Plan submitted by Environ. We concur completely that that Plan was too general and did not satisfactorily discuss any of the four points contained in the above question. These shortcomings were pointed out in the DEIR, which, in so doing, has

served its function well. Much work has taken place since the DEIR was released to resolve these questions. This Addendum further addresses these issues. The DEIR, together with this Addendum, constitutes the Final EIR, which provides decision-makers and the public with sufficient information about the environmental effects of the project. It was emphasized in the DEIR, and reiterated in this addendum, that appropriate assignment of costs, further studies, more detail of physical facilities, and planning and implementation mechanisms needed to be specified to insure a satisfactory plan which will be carried out. It is now the function of decision-makers to answer these concerns in their deliberations on the project.

"In reference to your List of Information Subjects for Environmental Documents, special attention should be given to discussing sections III.A. and III.B.1 and 2 in the EIR."

Comment: The referenced sections refer to impacts of: changes in surface and groundwater quantity (effects on other users, effects on surface water instream uses, effects on groundwater uses) and changes in surface and groundwater quality (wastewater, drainage patterns, temperature, turbidity, biostimulants, toxic chemicals, dissolved inorganic and organic materials, dissolved oxygen, and oxygen-demanding substances). These impacts have been discussed in this section of the Addendum to the apparent satisfaction of RWQCB as noted in their letter of August 2, 1980.

M. The response of Alameda County Water District is acknowledged.

ACWD is primarily concerned that a much larger bypass channel for Arroyo del Valle be built than the 100 cfs capacity proposed to allow the District to capture flood flow releases from Del Valle Dam.

Comment: ACWD currently has a water right at Niles Cone downstream from the Valley. The District apparently would be satisfied with 1,000 cfs capacity channel. If the operators propose a smaller channel, then it must be justified to the satisfaction of the District. As noted in the Draft EIR (page 14), a water rights study should be conducted to ensure proper response of the Reclamation Plan to existing rights and entitlements.

"The ACWD service area is expected to be fully developed before 2030; therefore, it would not likely be a beneficiary of the future water operation in the quarry as stated on page 58. There is a possibility too that the Zone 7 service area will be fully developed by 2030. . ."

Comment: ACWD and Zone 7 could be benefitted in other ways than in meeting average water demand; for example, quarry storage could provide emergency water in case of drought.

"A study needs to be made of the water quality impacts of the plan during the 50 year quarry period. There will be increasing evaporation losses with time. . . This could cause an adverse salt balance with consequent serious degradation of the groundwater quality."

Comment: The CH<sub>2</sub>M Hill study, described in Subsection G (response of Regional Water Quality Control Board) and Section II, is intended to address this concern. Indications are that groundwater quality degradation under the Alternative Plan would be relatively minor.

"Projections of future water levels in the Livermore-Amador Valley groundwater basin need to be made as part of a water management plan."

\* Comment: A water management plan for the Valley would be the responsibility of Zone 7. Such a plan is not directly connected with the issue of providing reclamation for quarry operations. The quarry operators prefer to keep groundwater levels low so as not to interfere with gravel extraction. ACWD prefers to keep levels as low enough to prevent intrusion of low quality groundwater into Alameda Creek. Zone 7's policy has been to fill the groundwater basin. Zone 7 is currently embarking on a study directed toward a water management plan for the basin. The quarries are only one of many parties interested in the results of such a study. In terms of reclamation, it is important that the specific (master) plan for reclamation be flexible enough to allow for the changing conditions which might occur through effectuation of a water management plan. Periodic or as-needed review of the Plan could provide for this.

\* ACWD concurs with the plan to retain or construct a channel for Arroyo del Valle along the southern perimeter of the Quarry Area. The channel should be sized to pass most of the flood flows rather than channel them into the pits. If the facilities required the flood flows to enter the pits, then the groundwater levels would no longer be under the control of Zone 7; they would be dependent on flows in Arroyo del Valle. This condition would increase the risk of high groundwater upwelling and flowing into tributaries of Alameda Creek which ACWD would oppose. Moreover, ACWD is planning facilities to divert flows up to about 1,000 cfs into its recharge area in the Niles Clove which would be partially cut off if the Arroyo del Valle channel is undersized."

Comment: This information is hereby incorporated into the EIR.

E. The response of the City of Pleasanton is acknowledged.

"The assumption that few services are required for sand and gravel operations or for construction of reclaimed sites is erroneous. The existing sand and gravel operations requires a transportation system, streets, traffic signals, and traffic enforcement. . . The statement that sand and gravel excavation and reclamation activities are self-contained and have little need for community facilities and services is erroneous. The further statement that financial support received through sales and property taxes from operations provides net benefits to community facilities and services without corresponding costs is entirely inaccurate. Evidently no consideration or study was given to the total effect of sand and gravel excavation on adjacent communities. . ."

Comment: The EIR text should be and is hereby modified to take into account impacts of quarry operations on nearby communities. Pleasanton suffers from the effects of truck traffic from the operations. Impacts external to the quarry area are temporary in nature (although long-term) and are not addressable through reclamation.

"Reference: p. 61, Impacts associated with keeping ground waters low. . ."

Comments: This paragraph expresses the City's position and requires no further comment.



- J. The response of Livermore Area Recreation and Park District is acknowledged.

"...the Livermore Area Recreation and Park District is concerned over the lack of quantified and qualified information on the short and long term changes in water flow which could occur during the project construction and after the project completion. Knowledge of this information will help us evaluate the impacts of the Reclamation Project on Sycamore Grove Park..."

Comment: Sycamore Grove Park lies entirely upstream from the Quarry Area. Changes in water levels in Arroyo del Valle are controlled by releases from Lake del Valle and will not be affected by activities in the Quarry Area.

The following responses were received pursuant to referral of an "Alternative Reclamation Plan" submitted by the quarry operators to mitigate impacts identified in the DEIR:

- K. The response of Alameda County Water District is acknowledged. The District reiterates the importance of providing larger capacity for the Arroyo del Valle replacement channel, as discussed in their earlier letter of August 30, 1979. The District's assessment of the need for additional capacity and impacts which would result if capacity is not provided are correct under current knowledge and are hereby incorporated into the EIR.

- L. The response of the Army Corps of Engineers is acknowledged. The Corps notes that portions of the project may require Section 404 permits.

"This proposal calls for reducing the surface area available for flood control storage beyond that used in the Alameda Urban Study report. This could severely impact on future structural alternatives for flood control."

Comment: The decision to reduce available water storage was made in order to mitigate water quality impacts of the previous plan, which provided more storage but at the expense of enormous water surface areas prone to evaporative losses, which in time would have caused salts to build up in the lakes. Thus, the latest Plan is intended to mitigate water quality impacts of the 1977 Plan through the trade-off of providing less storage.

- M. The response of Livermore-Amador Valley Water Management Agency is acknowledged. Their response concerns the Alternative Plan rather than the DEIR but some of their points bear comment:

"We remain concerned...over the implementability of some aspects of the plan. ...Some of these concerns are specified in the attached letter from our consulting engineers. ...We are also not convinced that the concept of 'free ion absorption' will actually result in water quality improvements."

Comment: See comments on letter from CH<sub>2</sub>M Hill for a discussion of these particular concerns.

"We believe that a thorough and enforceable monitoring program must be an essential element of any permit granted the quarry operators..."

Comment: We concur with the necessity for establishing a monitoring program. Refer to letter from Regional Water Quality Control Board dated August 2, 1980 for details. Such a program should be set up and enforced through the Specific (master) Plan for reclamation.

\* "We are concerned over the gravel operators' reluctance to engage in a joint, comprehensive monitoring program. . . . We would encourage your agency to pursue the goal of a comprehensive monitoring program."

Comments: A discussion has been underway among the operators, F&E and Regional Water Quality Control Board concerning details of monitoring relative to RWQCB letter of August 2, 1980. It is likely that a monitoring requirement will be included in the final Reclamation Plan.

The final two points in the EAV/MA letter set forth the Agency's position and recommendations concerning public vs. private degradation of groundwater and setting of an acceptable limit for TDS levels in Valley groundwaters. No comment in the context of this Bill appears necessary.

\* The letter from CILM Hill expresses concern over the lack of information in the "Alternative Plan" about certain assertions made in the Plan. CILM Hill notes three examples of possible problems. We concur that the information in the Plan is insufficient to provide confidence that these potential problems would not occur. The operators have already retracted the assertion that water quality is improved by "free ion leaching." The burden of proof must fall on the operators to show, through best available current knowledge and supporting data, that the Plan is workable. The Draft Plan could contain a policy that the operators demonstrate such workability within a certain time period (reference the letter from DWR) or until a requirement requiring ongoing monitoring to assure problems can be identified and addressed as early as possible.

13. The response of the Alameda County Flood Department is acknowledged. No comment appears necessary.

14. The response of the Department of Fish and Game is acknowledged. It is noted that a streambed alteration permit must be secured from the Department prior to mining in Arroyo del Valle channel.

15. The response of the California Department of Water Resources, Central District, is acknowledged. A major thrust of their remarks is that routine studies need be performed to demonstrate how water resources would remain viable (in terms of quantity and quality) throughout the mining period and thereafter. The studies should be done for more frequent starting periods, especially in the near term, than the years presented in the Alternative Plan. We concur fully with this recommendation. Routing studies would not only show how the reclamation plan would function, but would also bring to light any specific problems with the Plan which should be addressed. Such studies would effectively mitigate many of the concerns expressed by various parties about the operators' problems with Lakes I and II mentioned in the DWR letter.

DWR also notes agreement with the assessment in the BEIR concerning the need for future studies in the Valley (See also the August 2, 1980 letter from RWQCB, echoing this view). The need and foundation for certain studies should be explored in the near future and determination made as to appropriate participation in such studies.

- Q. The response of the City of Livermore is acknowledged. Their concerns have been expressed by other agencies and have been discussed elsewhere in this Addendum, particularly in Sections G and P.
- R. The response of the California Regional Water Quality Control Board, San Francisco Bay Regional, is acknowledged.

"We find the alternative plan is substantially improved over the earlier plan. . . it appears that the alternative plan has reduced water quality impacts to a level comparable to a fully mitigated quarry plan. . . we would expect that periodic review of model predictions vs. actual observations will be made. . ."

Comment: We concur. Periodic review of all aspects of ongoing reclamation will be essential to ensure flexibility of the plan to accommodate future knowledge and possible problems.

"We have yet to see any documentation of beneficiality of water quality by quarry operations as suggested on page 12."

Comment: The operators have retracted this assertion. The fact that the assertion was so glibly made, and then retracted, perhaps adds to the desirability to require routing studies of the operators to demonstrate viability of the rest of the plan.

"The Alternative Reclamation Plan still does not address the institutional measures (financing, management, operations, maintenance, etc.) needed between Zone 7 and the quarries; between the quarries themselves; and between the quarries and the County to assure that the Plan will be implemented."

Comment: We concur that these issues have not been satisfactorily addressed by the operators' Plan. Their position is that the force of the Specific Plan under state law, plus the strength of a reclamation plan with 5-year review pursuant to the Alameda County Surface Mining Ordinance, is sufficient to guarantee implementation of the overall Plan. Planning Department Staff, and most of the agencies interested in the matter, have felt the need for more specific assurances and agreements.

The remainder of RWQCB's response provides a brief status report on discussions among the operators, Zone 7, and RWQCB concerning specifics of a monitoring program. The need for such a program has been well documented in this EIR. Responsibilities remain to be assigned.

RWQCB also indicates that the concerns expressed in their previous communications have been adequately addressed in the Planning Staff's analysis and the above items.

- S. The response of the quarry operators, represented by Environ, Inc., are acknowledged. Their response was presented on pages 28-40 of the Alternative Reclamation Plan and addresses the significant impacts identified in the Draft EIR according to the numbering system used in the Draft EIR Summary. Their response notes that the Reclamation Plan proposed in 1977, on which the DEIR was written, has been amended by the Alternative Plan specifically to address many of the impacts identified in the DEIR. Comments on their responses follow according to their numbers:

1. "The EIR points out that there will be costs associated with the creation of the 'chain of lakes'. When the authority to use the Del Valle Reservoir terminates, the 'chain of lakes' can be used to replace that operational deficit and the costs previously associated with using the regulatory capacity of the Del Valle Reservoir and with percolation operations can be shifted to be used for operating the 'chain of lakes', which has greater flexibility in groundwater management than Del Valle Reservoir."

Comment: While Zone 7 currently has costs associated with groundwater management, their staff is confident, on the basis of considerable data collected, that the use of Del Valle Reservoir water and associated costs are primarily due to mining operations in the Valley. Thus, it is misleading to assert that the present cost will simply be transferred to a new operation. The present cost exists *because of mining*. The operators disagree with the conclusion that their operations are adversely affecting water supply and recharge.

2. The argument is advanced that evaporation from the chain of lakes should be considered use of water, rather than loss of water. An example of evaporation from a conservation reservoir or from farming operation is given.

Comment: Evaporation will be less from the reduced lake areas now proposed, but will still be significant—about 2,000 acre-feet annually. The evaporation is termed a loss because prior to mining, water storage in the Quarry Area was underground and not subject to loss. Beneficial uses require a one-time use of water, and considerable discretion can be applied as to reasonableness of use. But evaporation caused by transforming the storage system from a closed to an open one will be on-going and the discretionary decision capability is lost, since evaporation cannot be prevented. The loss can be mitigated, however, if sufficient capacity is provided in the chain of lakes to yield a sufficient net pass-through to overcome evaporative losses.

3. The assertion that present operation costs for water management can be transferred to operation of the chain of lakes is made and exemplified upon in point 1 above. Aside from the cost of water purchased by Zone 7, actual operating and maintenance costs of the Chain of Lakes (keeping sediment pits open, cleaning the sides of the percolation pits, daily work of diversion works, etc) would require more planning, funding, and manpower than is currently needed to percolate imported and local water in Arroyo del Valle and Arroyo Micos channels.

4. The assertion is made that water quality in the quarry lakes will not significantly be impaired by the chain of lakes system, if a flow-through of 10,000 acre-feet annually is maintained.

Comment: Section II of this addendum summarizes water quality impacts under the Alternative Plan. The assertion by Environ is correct under existing data and modeling technology. The necessity for 10,000 acre-feet to be passed through the system annually could be a problem if demand is smaller.

5. No comment appears necessary.
6. Zone 7 staff essentially concurs with these assertions, subject to demonstration of their validity, as noted in the letter from DWR (Section 2).
7. "Instead of making the groundwater basin more complex to manage, the Alternative Plan increases the flexibility and decreases the complexity."

Comment: We concur, if the Alternative Plan concept works.

8. "The Zone 7 Report on Yrroyo del Valle Recharge Investigation' indicates that the natural recharge capability of the stream has already been substantially reduced."

Comment: That same report also concludes that the reduction has been due to gravel extraction through blockage and removal of the gravel links connecting the streambed with the groundwater aquifers.

"The loss of percolating capacity of the natural stream channels as they exist today will be more than offset by the increased capacity of the lakes."

Comment: This is true only if the Plan's assumption that increased recharge on the west face of the quarry area will occur. This is theoretically possible, but must be demonstrated with water routing studies.

9. No comment appears necessary.
10. "...It is difficult to see how the reclamation plan as proposed will have negative impacts on riparian habitat."

Comment: Any impacts on riparian habitat will be mitigated through the process of obtaining a streambed alteration permit from the State Department of Fish and Game.

11. "The assertion is made that the Reclamation Plan can be carried out through existing reclamation procedures pursuant to the Alameda County Surface Mining Ordinance."

Comment: While a great deal of surety that the reclamation plan will be carried out as will be approved is available through devices in the ACSEMO, certain special requirements unique to this plan appear to be desirable. These include guarantee of commitment by the operators to continue to operate; commitment to certain common elements of the plan needed to make it work; commitment to participation in studies to demonstrate viability of the plan; creation of a fund to operate and maintain the manmade system proposed to replace the natural groundwater system; and guarantee that the facilities will work for a reasonable period of time after the entire system is in operation. We believe that the DEIR text is still valid.

12. "The responsibility of studies that enhance our knowledge rests with the public agencies that manage and control the basin. ...All present 'state of the art' knowledge indicates this proposal will work."

Comment: We concur that studies which enhance knowledge relating to the general groundwater basin are the responsibility of the appropriate public



agency. However, there are studies necessary to demonstrate the validity of the Reclamation Plan as proposed--such as the recharging studies requested by DWR--which should be the responsibility of the operators, who must bear the burden of proof of their own concept and its details.

13. The assertions are put forth that it is not the intention of the operators to control the Plan facilities, that it is Zone 7's responsibility to manage the groundwater basin, that a public agency would have to exercise original domain powers to acquire the quarry or else buy the land after quarrying is completed, and that an operating fund is unnecessary.

Comments: This position amply demonstrates the validity of the concern expressed in the Draft EIR. Groundwater is a public resource. If the operators are allowed, by the public, to adversely impact that resource under the condition that it be restored, then that restoration concept should include means necessary to maintain public control of the resource. It would be folly to allow the operators to gain gradual control/ownership of the resource while they are extracting profit from it over a period of decades, so that the public is forced to buy back what is rightfully theirs in the first place. Rather, an explicit system of easements should be granted to the public to manage the water facilities in the public interest. Necessity for an operating and maintenance fund as mitigation for quarry impacts is discussed in Sub-section I and elsewhere in this Addendum.

14. "...they (impacts of keeping groundwater levels low) are not major impacts having long or permanent effects. The alternative of filling the basin and flooding out the quarry would terminate these operations and would prevent the implementation of the Reclamation Plan."

Comments: We do not agree that the impacts of keeping groundwater levels low is minor. The impacts are significant and well covered in the DEIR, and will not be repeated here. We are skeptical of the claim that filling the basin would terminate the quarry operations. The quality of the material (plus its proximity to markets) suggests that changes in mining methods (for example, dredging) could be employed to continue harvesting. It is hoped that groundwater target levels can be agreed upon which recognize both the aggregate resource and the water resource without significantly impairing use of either.

15. No comment necessary.

Additional positive impacts asserted by the operators:

6. "The reduction in Arroyo del Valle's natural recharge can be offset by the use of the 'chain of lakes' and the recharge into the west face of the quarry area."

Comments: As noted under #8 above, west face recharge under the Plan has not been demonstrated to be greater than natural recharge reduction. If recharge under the Plan does overcome natural recharge reduction, then it should be considered as mitigation for impacts of mining rather than a positive impact.

9. "The Reclamation Plan can be a major tool used to manage the groundwater basin and can be constructed . . . at no cost to the County."

Comment: Again, the water management "tools" which would be provided by the chain of lakes should be viewed as mitigation for quarry impacts--i.e., reclamation--more than as a positive impact.

10. "The storage capacity of the 'chain of lakes', which exceeds the natural groundwater capacity of the Quarry Area, can be used to replace the storage capacity of the Del Valle Reservoir. . ."

Comment: It is not clear, within the limits of uncertainty of present estimates, whether the chain of lakes' usable storage capacity (closer to 23,000 acre-feet) exceeds that of the natural groundwater basin.

11. "The Reclamation Plan can be the catalyst for a new industry in Alameda County - Aquaculture."

Comment: Aquaculture should only be permitted as a use of the lakes if it can be shown to be compatible with operating requirements of the lakes in the public interest under varying conditions.

## SECTION 7

### IMPACTS/MITIGATION: "ALTERNATIVE RECLAMATION PLAN FOR THE LYNCHMOLE-AMALON VALLEY QUALITY AREA"

In this section, the Draft EIR will be brought up to date with respect to impacts and mitigation of a new reclamation plan proposed by the quarry operators. For the convenience of reviewers of these documents, references will be made to the Summary of the Draft EIR. That Summary listed 7 positive impacts and 13 adverse impacts resulting from the original Reclamation Plan submitted by the operators.

Under the new "Alternative Plan," all positive impacts identified in the Draft EIR Summary would still occur, except that #5 should be reworded as follows:

5. Possible increase in water storage capacity (in pits) over natural groundwater storage capacity in the groundwater basin. Open water storage would increase to about 1200 acres. Total storage volume of the chain of lakes would be 66,200 acre-feet, although usable storage would be closer to 32,600 acre-feet.

The adverse impacts of the "Alternative Plan" are summarized below, again with reference to numbered impacts of the original Plan as given in the DEIR Summary:

1. About 1,600 acres of impermeable core would be placed in the center of the upper groundwater bearing zone. Mitigation is proposed as the heart of the Alternative Reclamation Plan in the "chain of lakes" concept, to maintain transmissivity of water, but at certain costs and with certain other impacts.
2. Increase in evaporative losses over the natural groundwater state through exposure of the water to the atmosphere. Mitigation can be accomplished through providing enough fast storage and flow-through capacity in the chain of lakes system.
3. Increased cost of transmitting water through the Quarry Area for operation and maintenance of necessary facilities. Can be directly mitigated by requiring an operating fund to be set up by the quarry operators, or indirectly mitigated through provision of water management enhancement capabilities in the Reclamation Plan.
4. (This impact, degradation of water quality, would apparently not be significant under the Alternative Reclamation Plan).
5. Potential degradation of water quality due to exposure to atmosphere, human contact, potentially polluting development of land areas. Mitigation can be accomplished by establishing buffer strips around basins (proposed in the Alternative Plan), limiting human contact in critical areas, and controlling land uses to minimize possibility of pollution.
6. (This impact, siltation of water storage facilities, would apparently be kept to an acceptable level under the Alternative Reclamation Plan, which provides basins specifically for silt capture).



7. (This impact, increase in conductivity of mining the groundwater basin, would not be significant under the Alternative Reclamation Plan assuming its functions as asserted).
8. Possible loss of recharge capacity if proposed shift from Arroyo del Valle channel percolation to percolation from the west face of the Quarry Area provides less percolation than assumed in the Alternative Reclamation Plan. Water routing studies are needed to demonstrate the ability of this chain of lakes to function as planned in the context of the larger water system in the Valley. Mitigation would consist of financing of the necessary studies by the operators, and modifying the Plan accordingly if it is shown to be not viable.
9. Impacts relating to 1:1 slopes would not occur under the Alternative Reclamation Plan, which proposes adhering to the 2:1 standard as specified in the Alameda County Surface Mining Ordinance).
10. Although mining will result in further degradation of riparian habitat along Arroyo del Valle, no consideration is given in the reclamation plan to replacement of riparian and wildlife values. Some mitigation will occur through natural processes. Significant mitigation could be achieved through design and landscaping of the proposed replacement channel, and through the necessary permit procedure of the State Department of Fish and Game.
11. Possible abandonment of reclamation concept if costs become too large, if gravel companies (for whatever reasons) do not construct facilities, or if major revision of the facilities becomes necessary. The Plan depends on close cooperation of all three operators and could be jeopardized if this cooperation is not maintained over the decades. The Plan would also be jeopardized if one or more of the operators abandoned mining prior to effectuation of the Plan. Abandonment of concept would hinder effective reclamation of the Quarry Area and could generate significant impacts on land and water resources. Mitigation could be accomplished by requiring guarantees of cooperation among the operators and commitment to the overall concept. One possible means would be establishment of a trust fund, in which each operator would have a share of an amount sufficient to guarantee construction of facilities and incentive to continue to cooperate.
12. Possible unworkability of concept due to lack of geologic and hydrologic information concerning certain assumptions made. Mitigation: Studies to determine viability of reclamation concept and details of physical facilities needed should be funded by the operators. Maximum flexibility should be built into approval of the Plan so that it can be modified if indicated by the necessary studies.
13. Possible difficulty in implementing the operation of physical facilities as proposed if lands remain owned by the quarry operators. Mitigation could occur through the granting of easements to an appropriate public agency so that necessary access to water areas and support facilities areas are provided to allow public direction, management, maintenance, and use of

facilities to effectively water management planning and operation in the public interest. Operation in public interest, and the right of the public to manage and use water resources of the chain of lakes and area waters, water diminished with respect to quality and quantity, should be carefully guarded and should take precedence over all other uses to which the area may be put.

10. A distinct set of impacts is associated with keeping Basin groundwater levels low enough so as not to interfere with "economically viable and efficient" of sand and gravel, as called for in the Plan. The Alternative Plan claiming rising groundwater levels would prevent Reclamation Plan implementation. Impacts associated with keeping groundwater levels low include:

- loss of storage capacity of the groundwater basin during the mining period.
- loss of currently available water at cheaper rates. Mining water in the future will be considerably more expensive.
- loss of hedge against drought.
- increased energy consumption necessary for increased pumping.
- possible salt buildup in the basin.
- curtailment of groundwater management options.
- loss of opportunity to fill basin if State Water Project water becomes short in future years.

Mitigation could occur if agreements between the operator and Zone 7 could be reached so that mutually acceptable groundwater levels, which would impinge upon neither the water nor the gravel resources, could be maintained. Mitigation could also occur if the basin continues to be filled. If the operators convert to other methods of gravel extraction, such as dredging. In any case, the operators would be responsible for a reclamation plan to mitigate mining impacts.

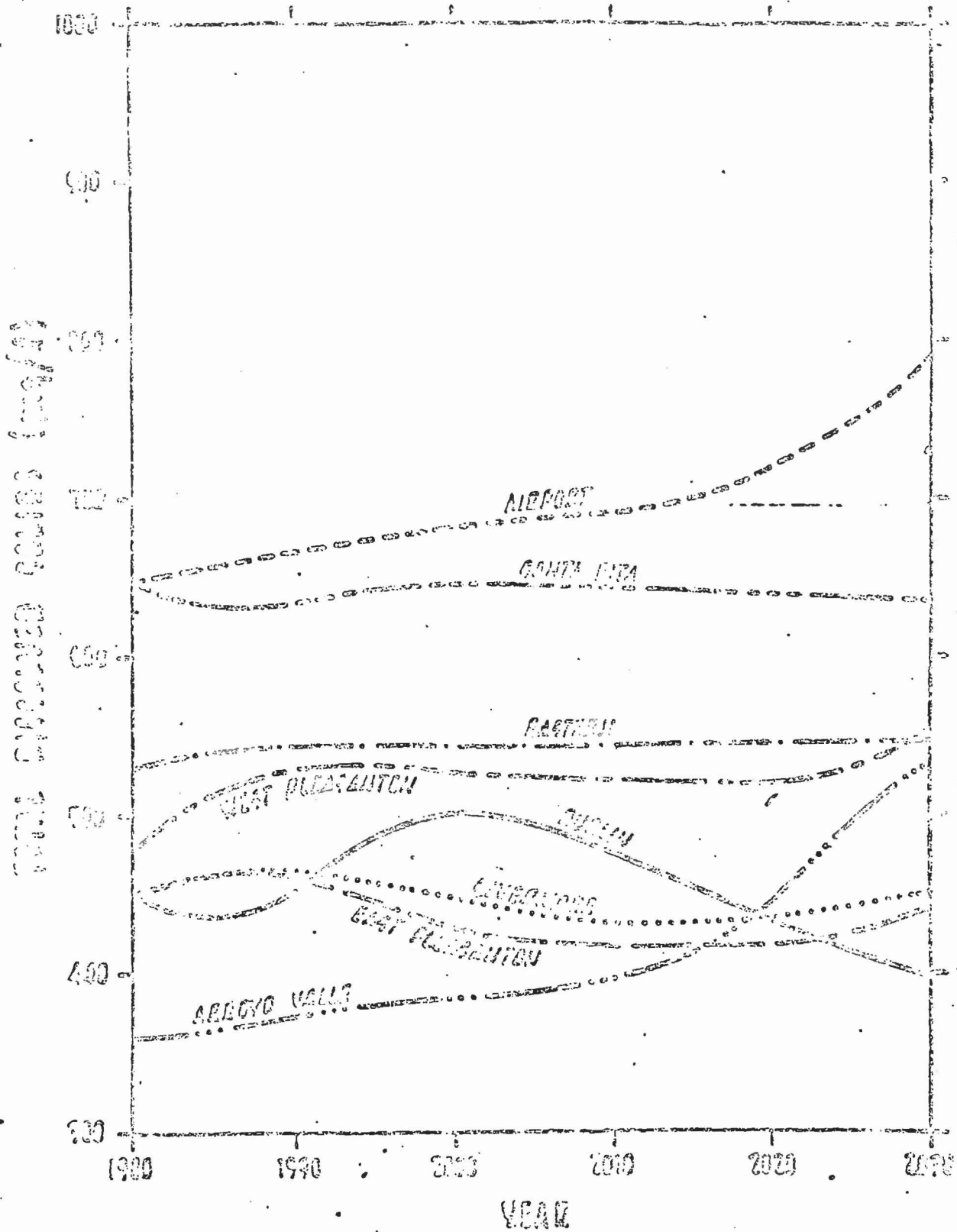
11. The Plan claims that the only considerations which would limit future land uses on reclaimed land areas are proximity to ongoing mining, geology, and structural soundness. Impacts on future public plans, policies, and environmental quality could occur. Mitigation is possible through recognition in the Plan that open space and mining-related industrial uses are most appropriate uses based on present knowledge until it can be demonstrated that more intensive uses would be consistent with public plans, policies, or environmental quality applicable at such future times.

The Alternative Reclamation Plan has certain additional impacts:

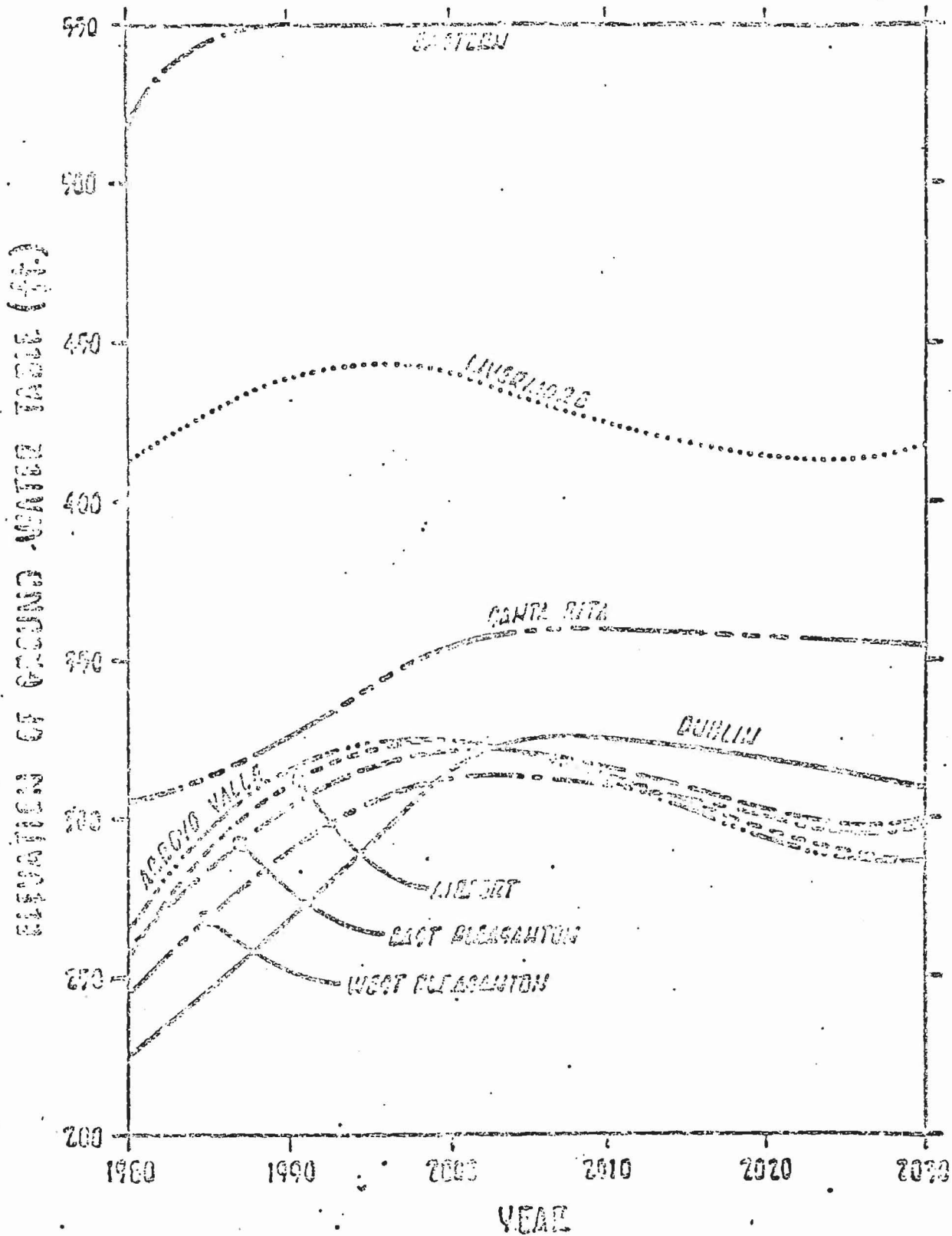
1. Decrease in water storage capacity from the original Plan. Although a conscious decision was made to decrease water storage capacity to reduce evaporative losses and safeguard water quality, by 2020 it is possible that water demand will be such that storage for flood control and water conservation will be more valuable than the benefits of reduced evaporation. Mitigation: The Plan should retain sufficient flexibility so that more storage could be provided in the future, if feasible, to meet changing public priorities.

2. The Alternative Plan proposes to put more inert material (and infiltration seals) in the center of the area south of, and adjacent to, Stanley Boulevard. This will inhibit lateral and vertical movement of water in this area. This may be a critical recharge area for lower aquifers if the gravels are in continuity with all three aquifers, as indicated in some past studies. More recent studies have produced data which has been interpreted to lessen the importance of this area for water recharge and movement. Mitigation: More study should be undertaken of geology and groundwater movement in this area to justify changing both the original Reclamation Plan and the approved Q-76 reclamation plan in designating this area for impermeable material rather than water.
3. Possible inworkability of concept if clay bottoms of the pits and dikes are not able to withstand uplift pressures or if they are not "impervious." Mitigation: Operators should conduct or finance studies to resolve the questions.
4. Possible loss of downstream flows which could otherwise be recovered by Alameda County Water District. Mitigation: A water rights study should be financed by the operators to ensure that the Alternative Reclamation Plan does not impinge on water rights.

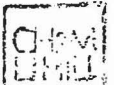
Since publication of the Draft EIR, results of a study of future water quality under various quarry alternatives has been released by CH2M Hill, consultants to Livermore-Amador Valley Water Management Agency. Results are discussed in Subsection G of Section I (Comments on response of Regional Water Quality Control Board). It must be emphasized that the study is based on a model and certain assumptions which are imperfect. Future studies will still be necessary to refine the model and assumptions so that water quality can be predicted with more confidence. Maintaining good water quality in the lakes will depend on passing through and using sufficient water to prevent salt buildup. Periodic flushing with flood flows may be required. Predictions of salt concentrations depend upon many factors, including inflow, outflow, water depth, water volume, surface area, depth-volume-area ratios, mixing ratios, thermocline location, temperature change, equilibrium points, location of inflow and outflow points, and quality of inflow water. The studies of different management strategies (routing studies and studies of the chain of lakes in context of the groundwater basin) are important in determining water quality impacts.

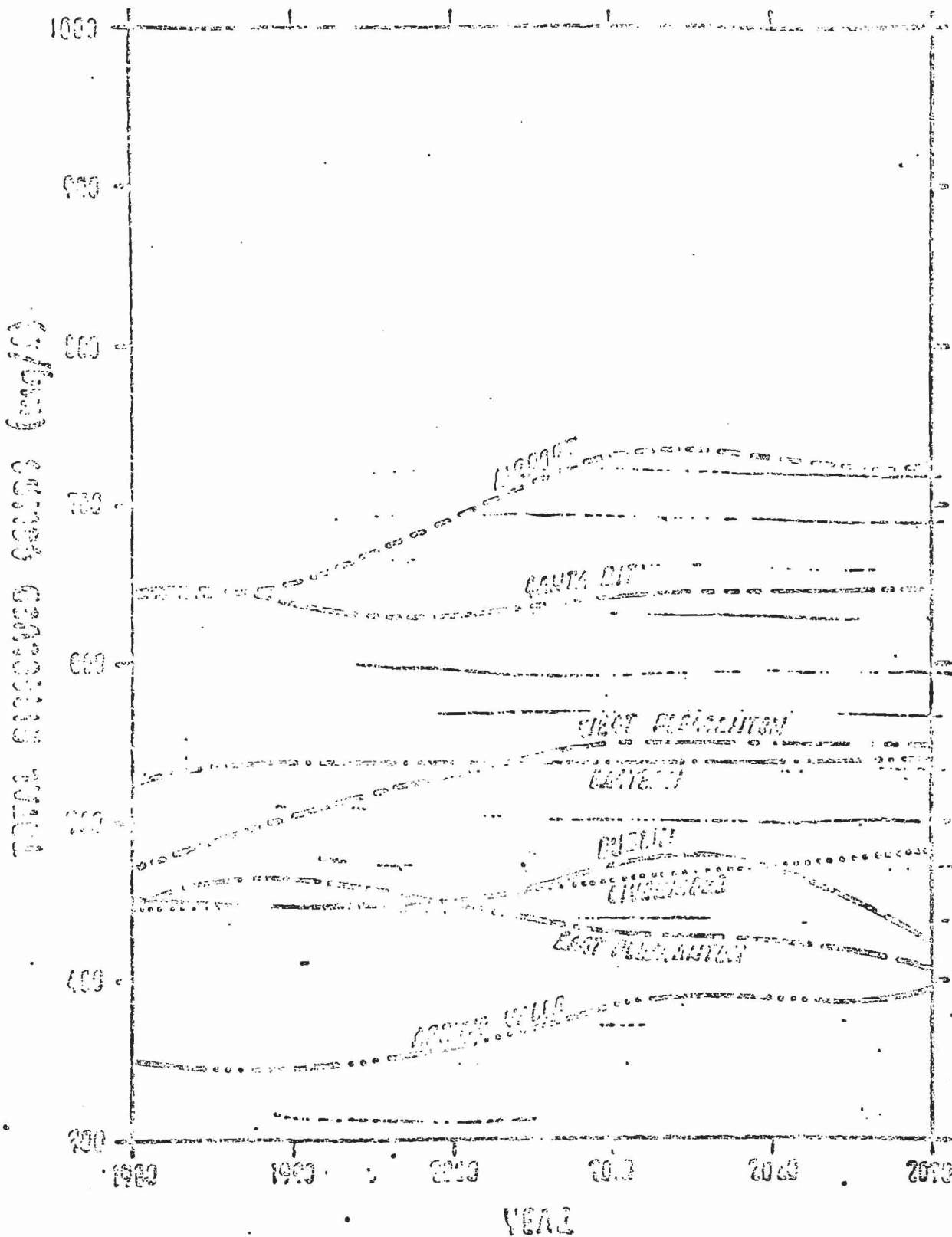


OLD QUARRY RECLAMATION PLAN  
PROJECTED GROUNDWATER QUALITY

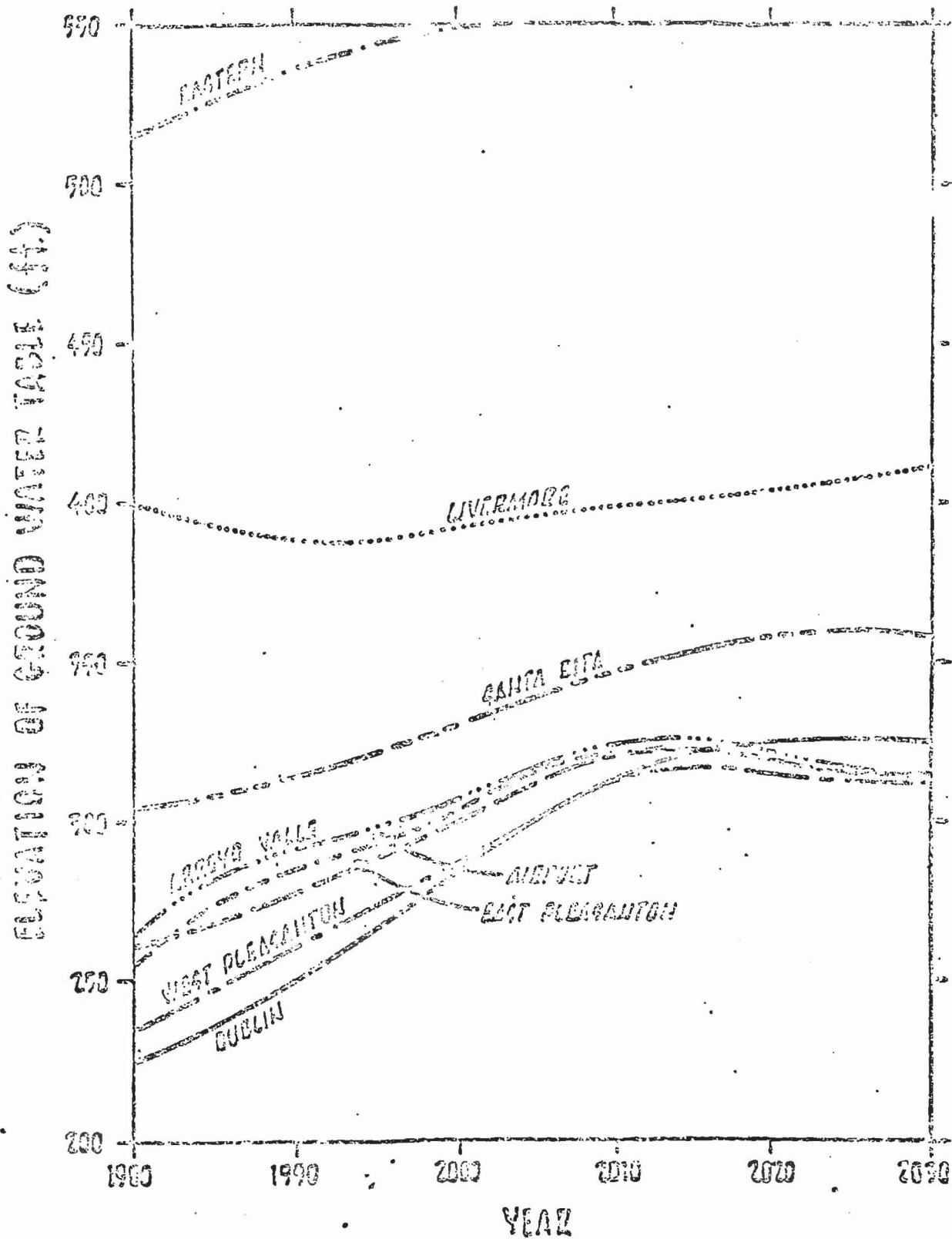


OLD QUARRY RECLAMATION PLAN  
PROJECTED GROUND WATER LEVELS





NEW QUARRY RECLAMATION PLAN  
PROJECTED ANNUAL WATER QUALITY



NEW QUARRY RECLAMATION PLAN  
PROJECTED GROUND WATER LEVELS



# PROJECTED GROUND WATER QUALITY

NO LEAKS, CONTIGUOUS CHARGE, LOW C.A. RECHARGE (1000 PF/415)

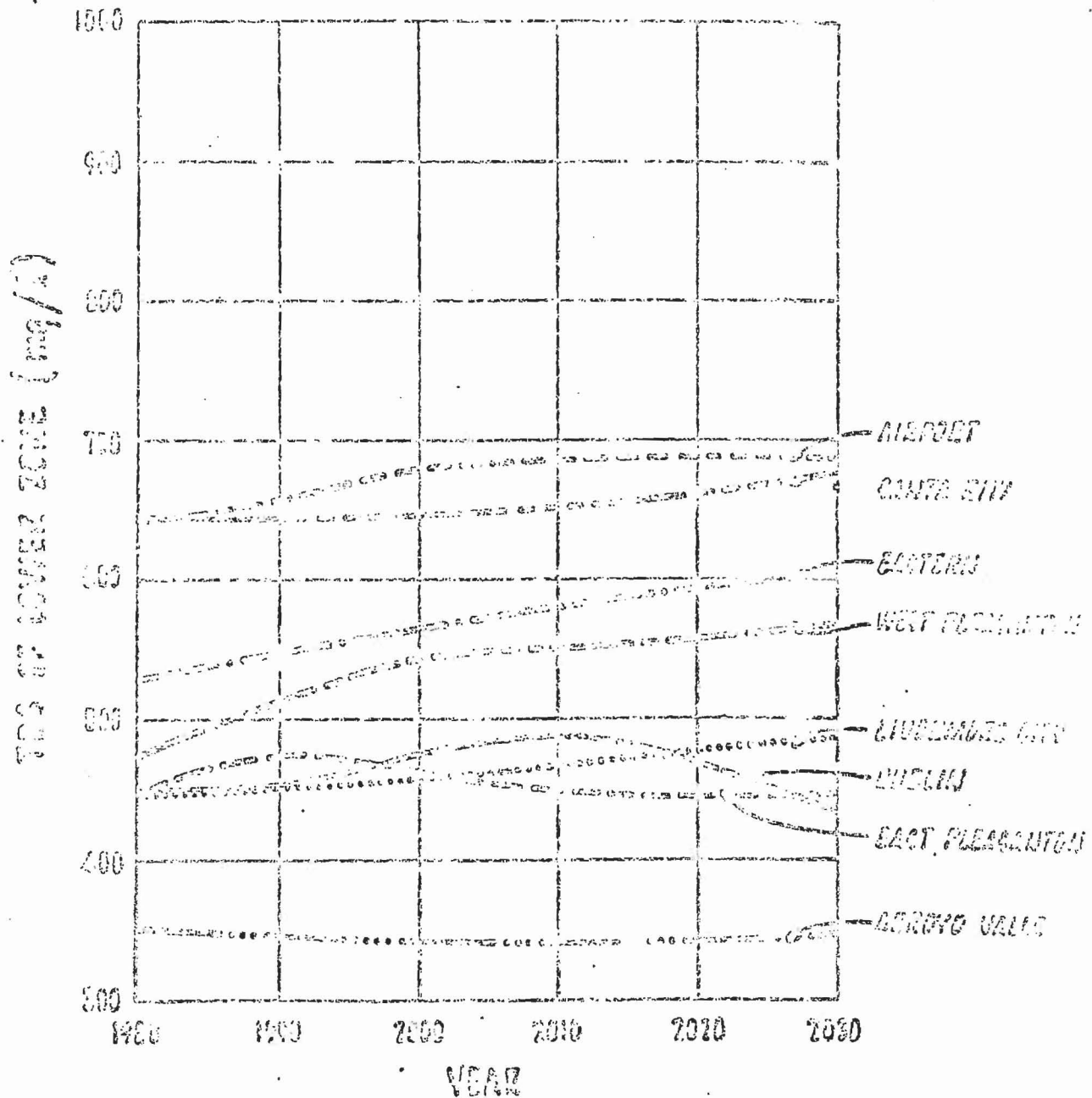


FIGURE 9-2

CHS  
OSM

# PROJECTED GROUND WATER LEVELS

NO LEAKS, MITIGATED QUARRIES, LOW PDA RECHARGE (4000 cfm/yr)

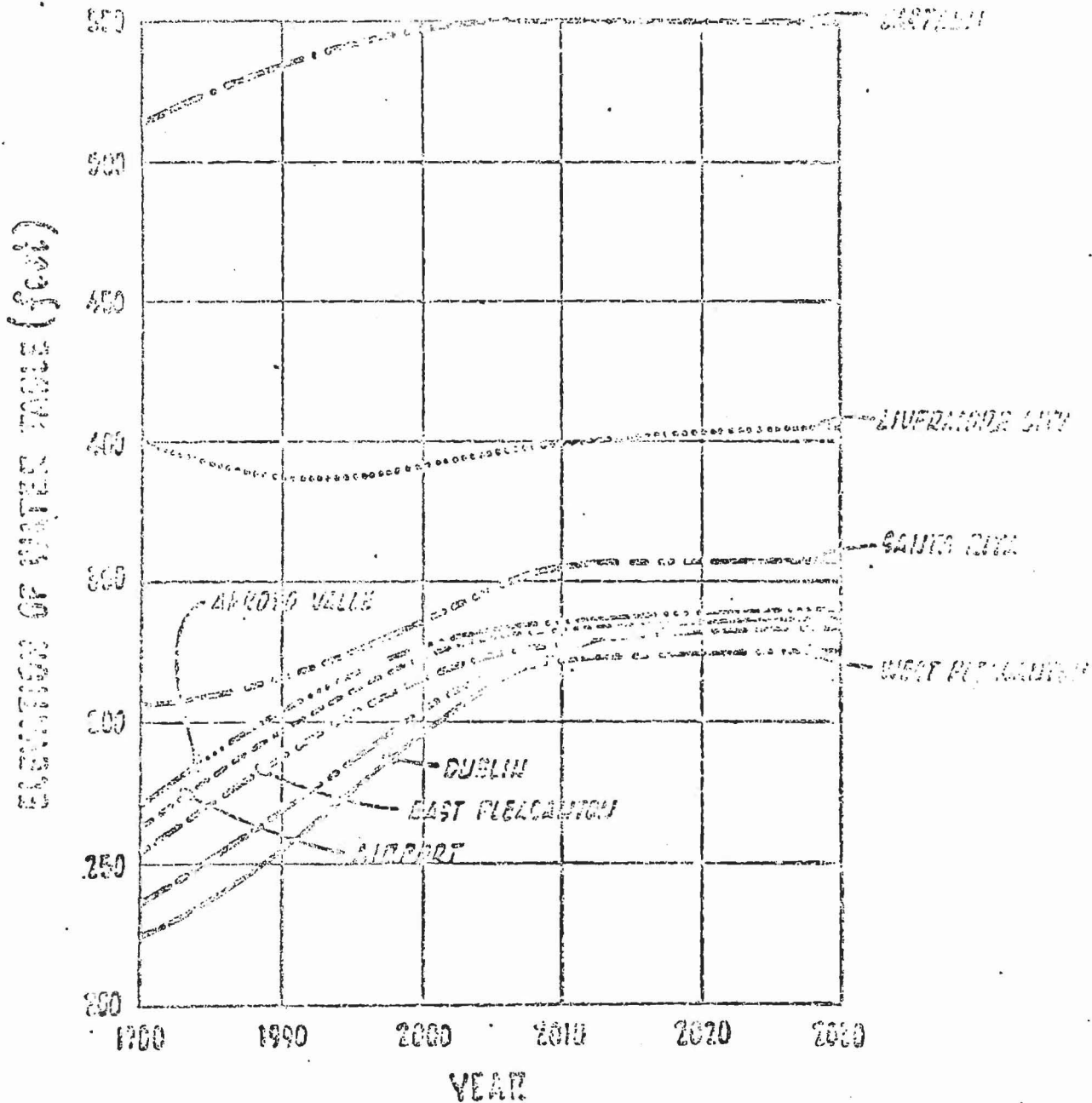


FIGURE 9-1

