

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION NO. 74-14

POLICY STATEMENT WITH RESPECT TO THE
IMPLEMENTATION OF TIME SCHEDULES FOR
FACILITIES TO PROTECT SHELLFISH

- I. WHEREAS, the Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, state: "... (2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife ... be achieved by July 1, 1983"; and
- II. WHEREAS, Division 7, Chapter 4, Article 3, of the Porter-Cologne Water Quality Control Act authorizes the Regional Water Quality Control Boards to establish beneficial uses and corresponding water quality objectives to protect and maintain those uses; and
- III. WHEREAS, the Interim Water Quality Control Plan, adopted by this Board in June, 1971, identified shellfishing as a beneficial use of all tidal waters within the region; and
- IV. WHEREAS, the draft of the Water Quality Control Plan has identified shellfishing as a beneficial use of San Francisco and San Pablo Bays; and
- V. WHEREAS, it has been determined that the types and potential sources of shellfish contamination are pathogenic contamination from municipal discharges, urban and natural runoff, and vessel wastes and heavy metal and pesticide contamination from municipal and industrial discharges and urban and natural runoff; and
- VI. WHEREAS, the point sources of contamination are easily identifiable and adequate treatment and disposal methods are readily available and control of the point sources will facilitate identification of the impact of non-point sources; and
- VII. WHEREAS, on October 15, 1974, this Regional Board held a public hearing to consider the staff report and comments from affected agencies and concerned citizens relative to implementing time schedules for the protection of shellfish beds for sport harvesting;
- VIII. THEREFORE BE IT RESOLVED that this Regional Board finds that:
 - A. The shellfish beds within the San Francisco Bay system can be categorized by their potential sources of pollutants as follows:
 - Category 1: The sources of potential contamination are mainly from point source discharges,
 - Category 2: The sources of potential contamination are mainly from point source discharges and seasonal nonpoint sources,
 - Category 3: The sources of potential contamination are mainly from point source discharges and continuous nonpoint sources;

- B. It is possible to achieve year-round or seasonal opening for sport harvesting of shellfish in beds in categories one and two by providing protection from local point source discharges;
 - C. Protection from point source discharges can be achieved by providing adequate separation between the discharge and shellfish beds and/or providing effective and reliable treatment.
- IX. BE IT FURTHER RESOLVED that it shall be the policy of this Regional Board to adopt time schedules for point source discharges affecting shellfish beds in conformance with the guidelines of the staff report dated August 23, 1974, excluding Table II and Figure 1, which is incorporated herein by reference.
- X. BE IT FURTHER RESOLVED that this Regional Board instructs its Executive Officer to:
- A. Evaluate those shellfish beds identified in the staff report and any other shellfish beds identified in the future within the Bay system and designate them to one of the previously described categories;
 - B. Evaluate those discharges to waters in the vicinity of shellfish beds to determine if the discharger is or will be providing adequate protection to allow for sport harvesting of shellfish;
 - C. Begin a program to identify and control nonpoint sources to allow for year-round shellfish harvesting.

I, Fred H. Dierker, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 15, 1974.


FRED H. DIERKER
Executive Officer

Attachment:

Memo 8/23/74 to Fred H. Dierker, 1460.00,
subject: Staff Report for Proposed Shellfish Policy

Memorandum

FRED H. DIERKER
Executive Officer

Date: August 23, 1974

In reply, please refer to
File No. 1460.00 (HJS)

PLANNING DIVISION

From : San Francisco Bay Regional Water Quality Control Board
1111 Jackson Street, Oakland 94607

Subject: STAFF REPORT FOR PROPOSED SHELLFISH POLICY

INTRODUCTION

Shellfishing has historically been a beneficial use identified within the San Francisco Bay system. In the recent past this beneficial use has been impaired to the point that at present it is unsafe to harvest shellfish for human consumption. It is desirable at this time due to the issuance of new discharge permits and the progress of many of the subregional planning efforts to provide guidance in the form of a policy statement to the staff and dischargers for the implementation of programs to provide for shellfish protection.

TYPES AND SOURCES OF CONTAMINATION

The basic concern for the protection of shellfish comes from the fact that these animals, due to their feeding methods (filter feeders), are able to retain and concentrate contaminants from the overlying waters and sediments. The basic types of contaminants are pathogenic organisms, heavy metals and pesticides. The shellfish are able to cleanse themselves of bacteriological contaminants if the overlying water quality improves. Once heavy metal or pesticide contaminants are deposited in the tissue of the shellfish the process by which they purge themselves is very slow and in most cases incomplete. It can therefore be stated that once shellfish are contaminated by heavy metals or pesticides they can be considered contaminated for a number of years after the discharge of these contaminants ceases. The sources of the various contaminants are from both point and nonpoint sources and therefore the determination of the actual effect of a single source can be very difficult. The point sources include both municipal and industrial discharges, bypasses, and vessel wastes while the nonpoint sources include urban and natural runoff.

At present, adopted limits have been established for only a few of the many possible contaminants. Bacteriological limits have been set for both the waters overlying shellfish beds and the shellfish meat itself. It is the failure to meet these limits, mainly the water limit, that is responsible for maintaining the restriction on commercial and recreational (sport) shellfish harvesting in the Bay. The only adopted limit for heavy metal contaminants is for mercury and the very small amount of data on this constituent makes it impossible to state if the shellfish are or are not, at present, contaminated to the point where this could restrict usage. However, from the limited data, it appears that heavy metal contamination will not represent a major restrictive problem.

Pesticides represent another type of potential contamination of the shellfish. Limits for pesticide concentrations in shellfish meat are presently nonexistent; however, various agencies and groups are studying the effects of these contaminants and strict limits could be set within a few years. There is no recent data available on pesticide concentrations in shellfish within the Bay; however data gathered during the late 1960's and early 1970's revealed concentrations much lower than any guideline limits for these constituents.

METHODS FOR CONTROL OF CONTAMINANTS

Pathogenic

In the past the major reliance for protection of shellfish beds from municipal discharges (specifically bacteriological contaminants) has been based on separation of the bed from discharge points by great distances. Most municipal discharges were near-shore and did not provide adequate distance for protection, hence the present shellfish harvesting restriction. Higher degrees of treatment process reliability can now be coupled with adequate separation to provide protection for the beds from these sources of contamination. Treatment process reliability factors have been adopted by the Environmental Protection Agency and similar factors are being considered for adoption by the State Department of Health. These are shown in Table I.

The discharge of vessel wastes has been prohibited by this Regional Board. Compliance with this prohibition involves providing holding facilities on vessels and pump-out facilities at marinas. The scarcity of pump-out facilities has prevented this prohibition from being fully implemented. New legislation now pending will require marinas to install pump-out facilities and thereby help to eliminate this problem.

Point source control can be accomplished because of ease of identification and reasonable costs associated with collection and treatment. Nonpoint sources, due to their diversity, are not easily identified and the costs for collection and treatment are high considering present technological and economic situations. Eventual control of these sources will be provided where necessary according to State and Federal law. Fortunately, most of the nonpoint sources are seasonal in nature and can be estimated as to time of occurrence. Therefore, on an interim basis, nonpoint source contamination can be dealt with by declaring beds unsafe during periods when the sources are contributing contaminants and safe during other periods providing there are no other limiting factors.

Heavy Metals

Heavy metal contaminants can be emitted from municipal and industrial point sources and many nonpoint sources. The contribution from municipal discharges should be reduced by implementation of adequate source control measures. The industrial sources are being required to provide best practicable treatment for their waste streams which should reduce or eliminate their contribution. The amount of heavy metal contaminants released by urban runoff, the major nonpoint source, has been extensively studied and estimated; however, more local work is needed before the contribution of this source can accurately be determined.

TABLE I

Reliability

The treatment facility should be capable of satisfactory operation during emergencies, maintenance, shutdowns, and power failures. This type of reliability shall be achieved by consideration and appropriate inclusion of such design factors as:

- a. Duplicate sources of electric power.
- b. Standby power for essential plant element.
- c. Multiple units and equipment.
- d. Holding tanks or basins to provide for emergency storage of overflow and adequate pump-back facilities.
- e. Flexibility of piping and pumping facilities to permit rerouting of flows under emergency conditions.
- f. Provision for emergency storage or disposal of sludge.

Discharges to Shellfish, Potable, or Recreational Waters

Discharges in close proximity to shellfishing beds, public water supply intakes, or contact recreation areas should be avoided. Where such discharges are unavoidable, special precautions must be taken. In addition to the items listed above, the following are recommended and may be required:

- a. Dual chlorination units.
- b. Automatic facilities to regulate and record chlorine residuals.
- c. Automatic alarm systems to give warning of high water, power failure, or equipment malfunction.
- d. Sand filters or polishing ponds following secondary treatment.

The above taken from "Federal Guidelines: Design, Operation and Maintenance of Wastewater Treatment Facilities", September 1970 by the U.S. Department of the Interior, pages 20-21.

Pesticides

The sources of pesticide contaminants are not fully known. Municipal and industrial discharges are probable sources along with urban and natural runoff. Much work is still needed in this area to determine the major sources and methods of control if it is found that pesticides are a factor limiting shellfish harvesting.

Shellfish Bed Identification and Classification

The shellfish beds within the Bay system have been studied quite thoroughly. In 1968 the Department of Fish and Game identified and described forty-two beds around the periphery of San Francisco and San Pablo Bays. Other beds may exist, but they would be in very inaccessible areas away from the shoreline and of secondary concern with respect to protection for sport harvesting. The beds were described in terms of size, type of shellfish present, accessibility, potential usage and identifiable local sources of contaminants. A summary of this information is contained in Table II. The location of these shellfish beds are shown on Figure I.

These shellfish beds identified by DF&G have been categorized in terms of reasonable timing for protection based on known sources of contaminants.

The three categories can be described as follows:

- (1) The sources of potential contamination of shellfish beds in this category are mainly from point source discharges. It is possible that by controlling (providing adequate distance between the sources and the bed, and reliability of treatment) the contamination sources these beds may be opened for year-round shellfish harvesting for human consumption.
- (2) The sources of potential contamination of shellfish beds in this category are both point and seasonal nonpoint. It is possible that by controlling the point sources these beds may be opened for seasonal shellfish harvesting for human consumption.
- (3) The sources of potential contamination of shellfish beds in this category are from both point and continuous nonpoint sources. It is improbable that by controlling the point sources these beds could be opened for either year-round or seasonal shellfish harvesting for human consumption. It is not justifiable to protect these beds from point source discharges until the means are available to control the nonpoint sources, however these beds should be protected for other than human consumptive uses in the interim.

Table II shows which category each bed has been designated. It should be noted that those beds designated in the first category will probably be opened to seasonal sport harvesting initially while a determination is made of the background effect of nonpoint sources on these beds.

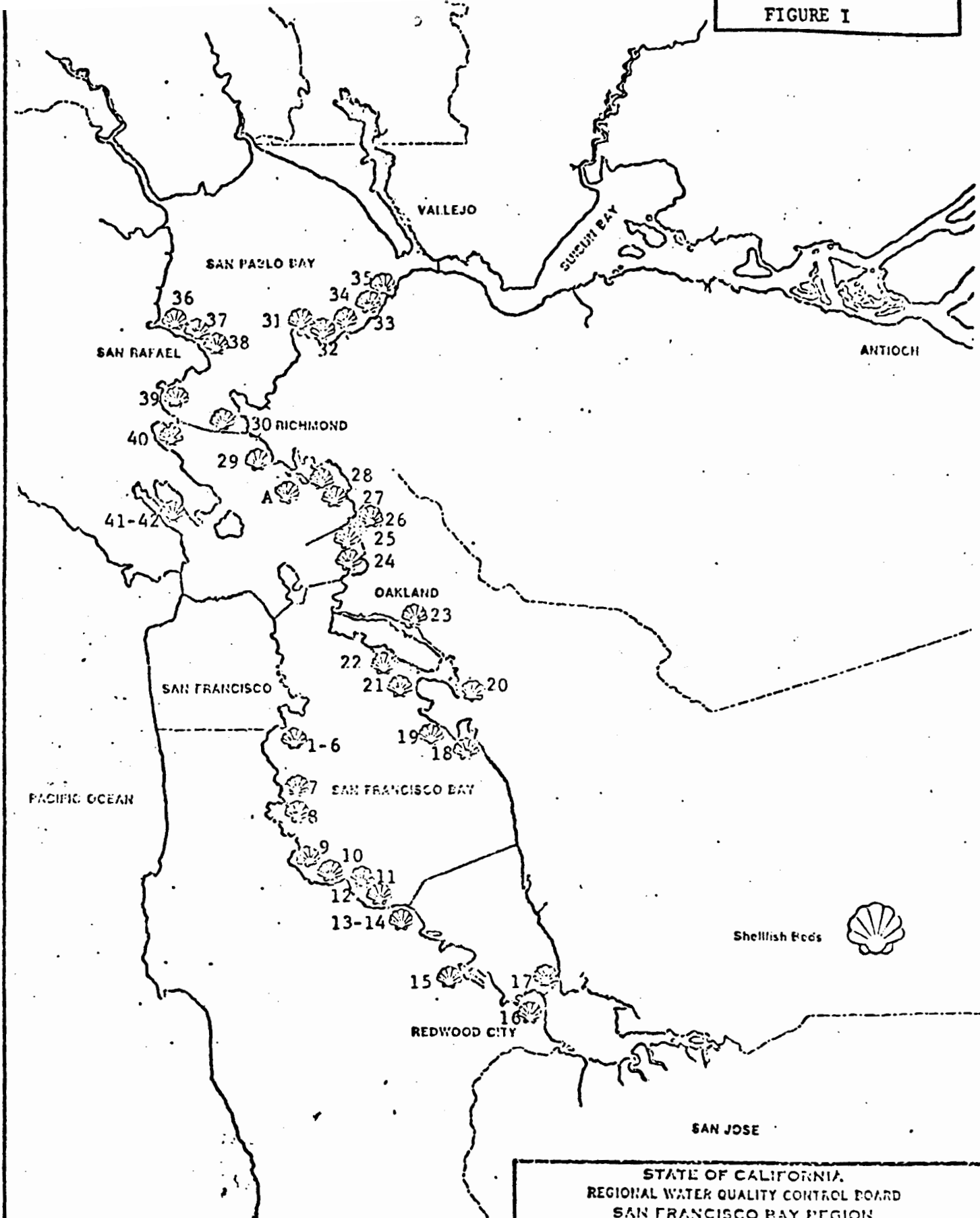
TABLE 11

BED NAME AND NUMBER as listed F & G 1968	PUBLIC ACCESS E= Excellent C= Good F= Fair P= Poor N= None * Access provided in 1969 ECDC Plan	POTENTIAL ANNUAL USE RANKING Most Use = 41 Least Use = 1	MUNICIPAL AND INDUSTRIAL POINT SOURCES	POTENTIAL NON-POINT SOURCES	TENTATIVE TIME SCHEDULE FOR ACHIEVING RECOMMENDED PROTECTION WHERE POINT SOURCE DISCHARGES ARE INVOLVED	RECOMMENDATION FOR PROTECTION *Locational protection provided in 1969 ECDC Plan	REMARKS
(1) Candlestick Pt.	*C	2		Storm drains		*2	Bed found to almost obliterated by Dept. of Health Sept 1970
(2) Bayview Pk E	*C	1		Sunnydale Ave. storm drain		*2	Same as bed #1
(3) Bayview Pk.	*C	26		Sunnydale Ave. storm drain		*2	Same as bed #1
(4) Bayshore	*C-E	4		Visitation Valley Storm Drain		*2	Same as bed #1
(5) Visitation Alley	*E	17		Visitation Valley Storm Drain		*2	Same as bed #1
(6) Ribbarec	*P	6		Guadalupe Canal		*2	Same as bed #1
(7) Oyster Pt.	*P	3		Marina Oyster Pt. Storm Drain		2	Area met bacterial standards in 5/ but continuing compliance assured
(8) L. San Bruno	*G	20	Merck South San Francisco SFIA	SFIA Storm Drains Colma Creek	1977	*2	This bed has been partially destroyed by landfill
(9) Orange	*G	38	Burlingame	Mills Creek Easton Creek	1975	2	This bed has part filled
(10) Coyote Pt. N.	*G	36	Burlingame	Storm Drains	1975	2	
(11) Coyote Pt. S.	*G	24	San Mateo	Marina	1977	2	Potential clamming area
(12) San Mateo Creek	N	5	San Mateo	San Mateo Creek Dump	1977	2	limited access
(13) San Mateo Br	G	10	San Mateo Estero	Seal Slough San Mateo Creek Marina Lagoon	1977	2	
(14) Foster City	*E	40	San Mateo Estero	Belmont Slough	1977/8	*2	excellent potential
(15) Redwood Creek	N	9	Redwood City	Redwood Creek Marina		3	
(16) Dumbarton Br	F-P	11	Menlo Park	Mayfield Slough	1978	3	
(17) Dumbarton Br	N	18	Union S.D. - Newark	Newark Slough	1977	3	
(18) San Leandro Marina	*G	33	San Leandro	San Leandro Marina Estudillo Canal Eden St. Storm Drain	1977	*2	
(19) Oakland Airport	N	15	San Leandro		1977	2	native oyster growing area
(20) San Leandro Bay	*G	39		Damon Slough San Leandro Creek Arroyo Viejo Creek Storm Drains		*2	
(21) Tancada Is. W.	*C	27		Same as Bed #20		*2	
(22) La Memorial Beach	*G-E	29				*1	
(23) Oakland Inner Harbor	*F-P	35		Vessels		*1	

TABLE II (continued)

(24)				Temescal Creek				
Emeroville	*F-G	7		Storm Drains			2	
(25)				Strawberry Creek				
Key-West of Foot				Aquatic Park			2	
Concroft	*F-G	25						
(26)				Same as				
Berkeley -Foot				bed # 25			2	
of University	*F-P	8						
venue								
(27)				El Cerrito Creek				
Albany Hill	*F-G	41	Stege S.D.	Buchanan St. outfall	1977	*2		Very good potential
				Climan St. drainage				due to size, some
				Cardoni Creek				access problems
(28)								
St. Isabel	*P-F	14	Stege S.D.	South Richmond Drainage	1977	2		
				Channel Ave. Drain				
(29)								
St. Richmond	*G	30	Richmond	Marina	1979	*1		
(30)								
Astro Pt.	*G	28	Richmond	Shipping channel	1979	1		
of Pt. San			Standard					
ablo			Oil					
(31)								
St. Pinole	*N	Unknown					*1	
(32)								
Para Hills	*F-G	34	Pinole	Garrity Creek	1979	*2		
(33)								
Between Tara			Pinole					
Hills & Pinole	*G	22		Pinole Creek	1979	2		
(34)								
Pinole	*G	37	Pinole	Pinole Creek	1979	*2		
(35)								
Rodeo	*G-E	16	Rodeo S.D.					siltation problem
			Union Oil	Redeo Creek	1979	2		reduce size of bed
(36)								
Gallinas Cr.	*G-E	12	San Rafael		1980	*2		
			Marin Bay Plant					
			Las Gallinas S D	Gallinas Creek				
			Hamilton AFB	Miller Creek				
(37)								
Between			Same as					
Gallinas Cr.			bed #36	Same as				
Rat Rock	*G	21		bed #36	1980	*2		
(38)								
At Rock	*E	13	Same as	Same as	1980	*2		
			bed #36	bed # 36				
(39)								
In Rafael Bay	*P-N	32	San Rafael	San Rafael Cr.	1980	2		land access is very
			Main Plant					limited
(40)								
In Quentin	*G	31	Sanitary Dist #1	Corte Magera Cr.	1980	*2		
			San Quentin					
(41)								
Strawberry Pt.	*G-E	23	Mill Valley		1980	*2		
			Richardson					
			Bay S.D	Houseboats				
(42)								
Richardson			Same as					
by	*G	19	Bed # 41	Same as bed	1980	*2		
				#41				
TIERS								
(A)		Unknown						access only
Books Is.			Richmond	Marina	1979	1		by boat

FIGURE I



STATE OF CALIFORNIA
 REGIONAL WATER QUALITY CONTROL BOARD
 SAN FRANCISCO BAY REGION

Shellfish Beds



Implementation

It is intended that this report be used as a guideline for determining time schedules for specific dischargers relative to protection of shellfish beds. Time schedules should reflect the degree of planning already accomplished by the discharger and the value of the specific bed affected if declared safe for sport harvesting.

For those dischargers in the vicinity of shellfish beds in categories one and two the time schedule should be consistent with that of the subregional program if those facilities recommended in the program will effectively protect the beds involved. However, if the discharger does not have an on-going planning and implementation program that will protect the affected beds then the time schedule should require the implementation of the necessary facilities as soon as is reasonably practicable. This will be handled on a case-by-case basis due to varied problems and methods to achieve compliance.

Those dischargers in the vicinity of shellfish beds in the third category should be advised that they will be required to provide protection for those beds in the future when adequate control of nonpoint sources is achievable. This will allow for the staged planning of facilities that will provide protection of the shellfish beds.

Nonpoint source control is necessary before those shellfish beds in categories two and three can be considered safe for year-round sport harvesting. Much work is necessary to determine the actual sources and the extent of their program for individual contributions before their control can be developed.

Methods of Protection

As has been previously discussed, treatment process reliability can now be depended upon in conjunction with adequate separation of the discharge from shellfish beds as a method to provide protection to the beds. However, a fixed correlation between treatment process reliability and separation for the entire bay region is impossible to establish due to the many variable factors that exist between discharges and receiving water bodies. It is therefore necessary to evaluate each situation on a case-by-case basis.

For municipal discharges maximum separation that is reasonably attainable of the discharge location from the shellfish beds is considered the primary safeguard. Separation will be evaluated in terms of distance and dilution. Treatment process reliability will be considered beneficial where separation is adequate and is considered imperative where maximum attainable separation is not deemed adequate to protect the shellfish beds.

For industrial discharges, treatment process efficiencies and adequate source control measures shall be considered the primary safeguard. Separation of the discharge in terms of distance shall be considered beneficial but not as a substitute for adequate treatment.

Submitted by

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Approved by

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