Bay Protection and Toxic Cleanup Program

Proposed Regional Toxic Hot Spot Cleanup Plan

December 1997

CENTRAL COAST REGION

REGIONAL WATER QUALITY CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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PROPOSED REGIONAL
TOXIC HOT SPOT CLEANUP PLAN

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REGIONAL WATER QUALITY CONTROL BOARD CENTRAL COAST REGION

Part I

I. INTRODUCTION

In 1989, The California State legislature established the Bay Protection and Toxic Cleanup Program (BPTCP). The BPTCP has four major goals: (1) to provide protection of present and future beneficial uses of the bays and estuarine waters of California; (2) identify and characterize toxic hot spots; (3) plan for toxic hot spot cleanup or other remedial or mitigation actions; (4) develop prevention and control strategies for toxic pollutants that will prevent creation of new toxic hot spots or the perpetuation of existing ones within the bays and estuaries of the State.

This Regional Toxic Hot Spot Cleanup Plan is intended to provide direction for the remediation and prevention of toxic hot spots in the Central Coast Region (pursuant to Water Code Sections 13390 et seq.). Pursuant to Sections 13140 and 13143 of the Water Code, this Cleanup Plan is necessary to protect the quality of waters and sediments of the State from discharges of waste, in-place sediment pollution and contamination, and any other factor that can impact beneficial uses of enclosed bays, estuaries and coastal waters. This plan shall be reviewed periodically to ensure that the plan is adequate to complete the mandates of the Bay Protection and Toxic Cleanup Program (Water Code Section 13390 et seq.).

This Plan includes a specific definition of a Toxic Hot Spot, site ranking criteria, and the monitoring approach used to identify the Water Code-mandated requirements for Regional Toxic Hot Spot Cleanup Plans.

Region Description (modified from the Central Coast Basin Plan, 1997)

The Central Coast Regional Board has jurisdiction over a 300-mile long by 40-mile wide section of the State's central coast. Its geographic area

encompasses all of Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara Counties as well as the southern one-third of Santa Clara County, and small portions of San Mateo, Kern, and Ventura Counties. Included in the region are urban areas such as the Monterey Peninsula and the Santa Barbara coastal plain; prime agricultural lands as the Salinas, Santa Maria, and Lompoc Valleys; National Forest lands, extremely wet areas like the Santa Cruz mountains; and arid areas like the Carrizo Plain. Historically, the economic and cultural activities in the basin have been agrarian. Livestock grazing persists, but it has been combined with hay cultivation in the valleys. Irrigation, with pumped local ground water, is very significant in intermountain valleys throughout the basin. Mild winters result in long growing seasons and continuous cultivation of many vegetable crops in parts of the basin.

While agriculture and related food processing activities are major industries in the region, oil production, tourism, and manufacturing contribute heavily to its economy. The northern part of the region has experienced a significant influx of electronic manufacturing, and the southern part has been heavily influenced by offshore oil exploration and production. Total population of the region is estimated to be 1.22 million people.

Water quality problems frequently encountered in the Central Coastal Basin include excessive salinity or hardness of local ground waters. Increasing nitrate concentration is a growing problem in a number of areas, both in ground water and surface water. Surface waters suffer from bacterial contamination, nutrient enrichment, and siltation in a number of watersheds. Pesticides are of concern in agricultural areas and associated downstream water bodies.

Legislative Authority

California Water Code, Division 7, Chapter 5.6 established a comprehensive program to protect the existing and future beneficial uses of California's enclosed bays and estuaries. SB 475 (1989), SB 1845 (1990), AB 41 (1989), and SB 1084 (1993) added and modified Chapter 5.6 [Bay Protection and Toxic Cleanup (Water Code Sections 13390-13396.5)] to Division 7 of the Water Code.

The Bay Protection and Toxic Cleanup Program (BPTCP) has provided a new focus on Regional Water Quality Control Board (RWQCB) efforts to control pollution of the State's bays and estuaries by establishing a program to identify toxic hot spots and plan for their cleanup.

Water Code Section 13394 requires that each RWQCB complete a toxic hot spot cleanup plan. Each cleanup plan must include: (1) a priority listing of all known toxic hot spots covered by the plan; (2) a description of each toxic hot spot including a characterization of the pollutants present at the site; (3) an assessment of the most likely source or sources of pollutants; (4) an estimate of the total costs to implement the cleanup plan; (5) an estimate of the costs that can be recovered from parties responsible for the discharge of pollutants that have accumulated in sediments; (6) a preliminary assessment of the actions required to remedy or restore a toxic hot spot; and (7) a two-year expenditure schedule identifying State funds needed to implement the plan.

Limitations

This proposed regional toxic hot spot cleanup plan contains information on sites that are believed to be the worst sites in Region 3 based on BPTCP data. Much of the data collected as part of the BPTCP has not yet been reported and some analyses have yet to be completed. In some cases additional sampling and analysis is needed to complete the sediment triad or to confirm previous results. Consequently, this regional toxic hot spot cleanup plan is subject to revision as new information on toxic hot spot identification becomes available. In future versions of this Plan there is an expectation that (1) other sites may be identified as candidate toxic hot spots; (2)other potential toxic hot spots may be addressed in future versions; (3) specific requirements for post cleanup conditions may be added; and (4) site rankings may change as new information becomes available.

II. TOXIC HOT SPOT DEFINITION

Codified Definition of A Toxic Hot Spot

Section 13391.5 of the Water Code defines toxic hot spots as:

"...[L]ocations in enclosed bays, estuaries, or adjacent waters in the 'contiguous zone' or the 'ocean' as defined in Section 502 of the Clean Water Act (33. U.S.C. Section 1362), the pollution or contamination of which affects the interests of the State, and where hazardous substances have accumulated in the water or sediment to levels which (1) may pose a substantial present or potential hazard to aquatic life, wildlife, fisheries, or human health, or (2) may adversely affect the beneficial uses of the bay, estuary, or ocean waters as defined in the water quality control plans, or (3) exceeds adopted water quality or sediment quality objectives."

Specific Definition of A Toxic Hot Spot

Although the Water Code provides some direction in defining a toxic hot spot, the definition presented in Section 13391.5 is broad and somewhat ambiguous regarding the specific attributes of a toxic hot spot. The following specific definition provides a mechanism for identifying and distinguishing between "candidate" and "known" toxic hot spots. A Candidate Toxic Hot Spot is considered to have enough information to be designated as a Known Toxic Hot Spot except that the candidate hot spot has not been approved by the RWQCB and the State Water Resource Control Board (SWRCB). Once a candidate toxic hot spot has been adopted into the consolidated statewide toxic hot spot cleanup plan then the site shall be considered a known toxic hot spot and all the requirements of the Water Code shall apply to that site.

Candidate Toxic Hot Spot:

A site meeting any one or more of the following conditions is considered to be a "candidate" toxic hot spot.

1. The site exceeds water or sediment quality objectives for toxic pollutants that are contained in appropriate water quality control plans or exceeds

water quality criteria promulgated by the U.S. Environmental Protection Agency (U.S. EPA).

This finding requires chemical measurement of water or sediment, or measurement of toxicity using tests and objectives stipulated in water quality control plans. Determination of a toxic hot spot using this finding should rely on recurrent measures of toxicity over time (at least two separate sampling dates). Suitable time intervals between measurements must be determined.

2. The water or sediment exhibits toxicity associated with toxic pollutants that is significantly different from the toxicity observed at reference sites (*i.e.*, when compared to the lower confidence interval of the reference envelope), based on toxicity tests acceptable to the SWRCB or the RWQCBs.

   To determine whether toxicity exists, recurrent measurements (at least two separate sampling dates) should demonstrate an effect. Appropriate reference and control measures must be included in the toxicity testing. The methods acceptable to and used by the BPTCP may include some toxicity test protocols not referenced in water quality control plans (*e.g.*, the Bay Protection and Toxic Cleanup Program Quality Assurance Project Plan). Toxic pollutants should be present in the media at concentrations sufficient to cause or contribute to toxic responses in order to satisfy this condition.

3. The tissue toxic pollutant levels of organisms collected from the site exceed levels established by the United States Food and Drug Administration (FDA) for the protection of human health, or the National Academy of Sciences (NAS) for the protection of human health or wildlife. When a health advisory against the consumption of edible resident non-migratory organisms has been issued by Office of Environmental Health Hazard Assessment (OEHHA) or Department of Health Services (DHS), on a site or water body, the site or water body is automatically classified a "candidate" toxic hot spot if the chemical contaminant is associated with sediment or water at the site or water body.

Unacceptable tissue concentrations are measured either as muscle tissue (preferred) or whole body residues. Residues in liver tissue alone are not considered a suitable measure for known toxic hot spot designation. Animals can either be deployed (if a resident species) or collected from resident populations. Recurrent measurements in tissue are required. Residue levels established for one species for the protection of human health can be applied to any other consumable species.

Shellfish: Except for existing information, each sampling episode should include a minimum of three replicates. The value of interest is the average value of the three replicates. Each replicate should be comprised of at least 15 individuals. For existing State Mussel Watch information related to organic pollutants, a single composite sample (20-100 individuals), may be used instead of the replicate measures. When recurrent measurements exceed one of the levels referred to above, the site is considered a candidate toxic hot spot.

Fin-fish: A minimum of three replicates is necessary. The number of individuals needed will depend on the size and availability of the animals collected; although a minimum of five animals per replicate is recommended. The value of interest is the average of the three replicates. Animals of similar age and reproductive stage should be used.

4. Impairment measured in the environment is associated with toxic pollutants found in resident individuals.

   Impairment means reduction in growth, reduction in reproductive capacity, abnormal development, histopathological abnormalities. Each of these measures must be made in comparison to a reference condition where the endpoint is measured in the same species and tissue is collected from an unpolluted reference site. Each of the tests shall be acceptable to the SWRCB or the RWQCBs.

   Growth Measures: Reductions in growth can be addressed using suitable bioassay acceptable to the State or Regional Boards or through measurements of field populations.

Reproductive Measures: Reproductive measures must clearly indicate reductions in viability of eggs or offspring, or reductions in fecundity. Suitable measures include: pollutant concentrations in tissue, sediment, or water which have been demonstrated in laboratory tests to cause reproductive impairment, or significant differences in viability or development of eggs between reference and test sites.

Abnormal Development: Abnormal development can be determined using measures of physical or behavioral disorders or aberrations. Evidence that the disorder can be caused by toxic pollutants, in whole or in part, must be available.

Histopathology: Abnormalities representing distinct adverse effects, such as carcinomas or tissue necrosis, must be evident. Evidence that toxic pollutants are capable of causing or contributing to the disease condition must also be available.

5. Significant degradation in biological populations and/or communities associated with the presence of elevated levels of toxic pollutants.

   This condition requires that the diminished numbers of species or individuals of a single species (when compared to a reference site) are associated with concentrations of toxic pollutants. The analysis should rely on measurements from multiple stations. Care should be taken to ensure that at least one site is not degraded so that a suitable comparison can be made.

   In summary, sites are designated as "candidate" hot spots after generating information which satisfies any one of the five conditions constituting the definition.

Known Toxic Hot Spot:

A site meeting any one or more of the conditions necessary for the designation of a "candidate" toxic hot spot that has gone through a full SWRCB and RWQCB hearing process, is considered to be a "known" toxic hot spot. A site will be considered a "candidate" toxic hot spot until approved as a known toxic hot spot in a Regional Toxic Hot Spot Cleanup Plan by the RWQCB and approved by the SWRCB.

III. MONITORING APPROACH

As part of the legislative mandates, the BPTCP has implemented regional monitoring programs to identify toxic hot spots (Water Code Section 13392.5). The BPTCP has pioneered the use of effects-based measurements of impacts in California's enclosed bays and estuaries. The Program has used a two-step process to identify toxic hot spots. The first step is to screen sites using toxicity tests. In the second step, the highest priority sites with observed toxicity are retested to confirm the effects. This section presents descriptions of the BPTCP monitoring objectives and sampling strategy.

Monitoring Program Objectives

The four objectives of BPTCP regional monitoring are:

1. Identify locations in enclosed bays, estuaries, or the ocean that are potential or candidate toxic hot spots. Potential toxic hot spots are defined as suspect sites with existing information indicating possible impairment but without sufficient information to be classified further as a candidate toxic hot spot.

2. Determine the extent of biological impacts in portions of enclosed bays and estuaries not previously sampled (areas of unknown condition);

3. Confirm the extent of biological impacts in enclosed bays and estuaries that have been previously sampled; and

4. Assess the relationship between toxic pollutants and biological effects.

Sampling Strategy

Screening Sites and Confirming Toxic Hot Spots Sites

In order to identify toxic hot spots a two step process is used. Both steps are designed around an approach with three measures (sediment quality triad analysis) plus an optional bioaccumulation component. The triad analysis consists of toxicity testing, benthic community analysis, and chemical analysis for metals and organic chemicals.

The first step is a screening phase that consists of measurements using toxicity tests or benthic community analysis or chemical tests or bioaccumulation data to provide sufficient information to list a site as a potential toxic hot spot or a site of concern. Sediment grain size, total organic carbon (TOC), NH_3 and H_2S concentration are measured to differentiate pollutant effects found in screening tests from natural factors.

A positive result or an effect in any of the triad tests triggers the confirmation step (depending on available funding). The confirmation phase consists of performing all components of the sediment quality triad: toxicity, benthic community analysis, and chemical analysis, on the previously sampled site of concern.

Region-specific Modifications of the Monitoring Approach

No specific modifications to the standard approach were initiated by Region 3. In a number of sites in the Region, data was either not collected more than once or was archived for future analysis. As a result of this, a number of potential sites cannot be fully evaluated as toxic hot spots due to lack of information. Where appropriate, future resources should be committed to analyze the archived samples for confirmation purposes.

Special Studies Performed in the Region

Water quality problems at Moss Landing Harbor led to a site specific study by BPTCP. Tembladero Slough, one of the major inflows to the Harbor, was selected as an area for a more focused study. Three monitoring stations were placed on Tembladero Slough itself; one just downstream of the City of Salinas (Upper Tembladero), one just upstream of Alisal Slough (Central Tembladero), and one at its junction with the Old Salinas River Channel (Tembladero Mouth). Other stations were sited at the confluence of the slough with its major tributaries. These included the Old Salinas River Channel, Espinosa Slough, and Alisal Slough. Sites were sampled for sediment and water toxicity, basic water quality parameters, metals and organic chemicals in sediment, and organic chemicals in semi-permeable membrane devices. Sediment toxicity tests were run on several species (Hyalella at fresh water sites, and on Eohaustorius in areas of marine influence).

Preliminary results indicate water toxicity at the central and upper Tembladero Slough sites. Sediment toxicity was found at Sandholdt Bridge, Tembladero mouth, Old Salinas River channel, Espinosa Slough and Upper Tembladero. During this study, only the Upper Tembladero site (below the City of Salinas) showed toxicity in both water and sediment tests. Grain size of sediment can effect the results of toxicity testing for certain organisms. Some of the sediment toxicity at the lower stations may be related to grain size of sediment. Chemical analyses have not yet been completed. Additional toxicity tests are necessary to confirm the preliminary findings. The sites are not included for consideration as toxic hot spots because of still uncompleted data collection and analysis activities.

IV. CRITERIA FOR RANKING TOXIC HOT SPOTS

A value for each criterion described below is developed where appropriate information exists or estimates can be made. Any criterion for which no information exists is assigned a value of "No Action". A matrix of the scores of the ranking criteria is created. If the majority of ranking criteria are "High" then the site is listed in the "High" priority list of Toxic Hot Spots. The following ranking criteria was used:

Human Health Impacts

Human Health Advisory issued for consumption of non-migratory aquatic life from the site (assign a "High"); tissue residues in aquatic organisms exceed FDA/DHS action level and U.S. EPA screening levels ("Moderate").

Aquatic Life Impacts

For aquatic life, site ranking is based on an analysis of the preponderance of information available (*i.e.*, weight-of-evidence). The measures considered were: the sediment quality triad (sediment chemistry, toxicity, and benthic community analysis), water toxicity, toxicity identification evaluations (TIEs), and bioaccumulation.

Stations with hits in any two of the measures if associated with high chemistry, were assigned a "High" priority. A hit in one of the measures associated with high chemistry is assigned "moderate". Stations with high sediment or water chemistry only is assigned "low".

Water Quality Objectives[1]:

Any chemistry data used for ranking under this section is no more than 10 years old, and has been analyzed with appropriate analytical methods and quality assurance.

Water quality objective or water quality criterion: Exceeded regularly (assigned a "High" priority), occasionally exceeded ("Moderate"), infrequently exceeded ("Low").

Areal Extent of Toxic Hot Spot

Consists of one of the following values: More than 10 acres, 1 to 10 acres, less than 1 acre.

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[1] Water quality objectives to be used are found in Regional Water Quality Control Board Basin Plans or the California Ocean Plan (depending on which plan applies to the water body being addressed). Where a Basin Plan contains a more stringent value than the statewide plan, the regional water quality objective will be u

Pollutant Source

One of the following values is selected: Source(s) of pollution identified ("High" priority), Source(s) partially known ("Moderate"), Source is unknown ("Low").

Natural Remediation Potential

One of the following values is assigned: Site is unlikely to improve without intervention ("High"), site may or may not improve without intervention ("Moderate"), site is likely to improve without intervention ("Low").

V. FUTURE NEEDS

For several of the data sets collected in the Central Coast Region, sediment samples which have been collected have been archived pending outcome of toxicity tests. All sites which showed toxicity should be analyzed for sediment chemistry to aid in confirming the validity of the toxicity hit.

A number of sites have shown toxicity, sediment chemistry problems or other indications of pollutants, but insufficient evidence is currently available to consider them "candidate toxic hot spots". Further information should be gathered at these sites to either confirm them as Toxic Hot Spots or remove them from further consideration. Sites of Concern are identified in Section VI.

VI. Sites of Concern (Sites that do not currently qualify as Candidate Toxic Hot Spots)

The sites described below showed indications of toxicity or other related problems, but insufficient evidence was available to rank them as candidate hot spots. They are listed here for consideration as targets of future monitoring or analysis efforts.

Water body name	Segment Name	Site Identification	Reason for Listing	Pollutants present at the site	Report reference
Monterey Harbor	Monterey Yacht Harbor Marina	Monterey Boatyard - Station #30012.0	Aquatic Life Concerns – Sediment Toxicity but no confirming sediment chemistry. Bioaccumulation in mussels (exceeds Median International Standards for Copper, Lead and Zinc)	Lead, copper, zinc, tributyltin, PCBs, toxaphene.	BPTCP data, State Mussel Watch Data (1988,1989, 1992, 1994)
Andrew's Pond	CAE306.0000	Andrews Pond - Station #31003.0	High Sediment Toxicity, but no confirming sediment chemistry	Unknown	BPTCP data
Elkhorn Slough	Egret's Landing	Egret's Landing - Station # 31001.0	High Sediment Toxicity	Nickel	BPTCP data
Santa Maria River	Santa Maria Estuary	Santa Maria Estuary - Station #30020	Only one sample taken by BPTCP, but very high values of some chemicals, high toxicity for Eohaustorius estuarius	DDT, Dieldrin, Endosulphan, Toxaphene, Methoxychlor	BPTCP data

Water body name	Segment Name	Site Identification	Reason for Listing	Pollutants present at the site	Report reference
Morro Bay	Morro Bay, South Bay	Morro Bay - Fuel Dock - Station #30033.0	All three sites showed toxicity; archived sediment samples need analysis	PCBs	BPTCP data

VII. Candidate Toxic Hot Spot List

These sites warrant consideration as Toxic Hot Spots because they meet criteria for Candidate status described earlier in this report. A site/problem was designated a candidate toxic hot spot if data collected to evaluate any of the first three categories (Human Health Impacts, Aquatic Life Impacts, or Water Quality Objectives) suggested that a "high" was merited. Information on aerial extent, source, and natural remediation potential are also included in the ranking matrix, when available, to help describe the problem. "No Action" indicates that no data is available for consideration (see Section IV).

Waterbody name	Segment Name	Site Identification	Reason for Listing	Pollutants present at the site	Report reference
CAB306.00 Moss Landing Harbor	Sandholdt Bridge	Sandholdt Bridge - Station #30007.0	Aquatic Life Concerns - Pesticides in sediment, sediment toxicity, bioaccumulation in mussels and clams	DDX, Toxaphene, Dieldrin, PCBs, Endosulphan, Chlorpyrifos, Chlordane, Dacthal,	BPTCP data, State Mussel Watch (1995, 1996)
CAB304.120 Santa Cruz Harbor	Santa Cruz Yacht Harbor	Santa Cruz Yacht Basin - Station #30001.0	Aquatic Life Concerns, Human Health Concerns –Sediment Chemistry, mussel tissue bioaccumulation	PAHs, PCBs, Copper, Tributyltin, Mercury, Chlordane	BPTCP data, Mussel Watch Data (1989)
CAE306.000 Bennett Slough	Bennett Slough/Estuary	Bennett Slough - Station #30023.0	Aquatic Life Concerns - Sediment Toxicity, sediment chemistry	Dieldrin	BPTCP data

VII. Ranking Matrix

Waterbody Name	Human Health Impacts	Aquatic Life Impacts	Water Quality Objectives	Areal Extent	Pollutant Source	Remediation Potential
Moss Landing Harbor	Moderate	High	No Action (No Data)	>10 acres	Moderate	Moderate
Santa Cruz Harbor	Moderate	Moderate	No Action	1-10 Acres	Moderate	High
Bennett Slough	No Action	Low	No Action	1-10 Acres	Moderate	Moderate

Part III

High Priority Candidate Toxic Hot Spot Characterization

Moss Landing Harbor is the only site in Region 3 investigated by BPTCP that appears to meet the program's criteria for "toxic hot spot" status. Because of high impacts to aquatic life due to sediment toxicity with confirming chemistry and tissue bioaccumulation, the areal extent of the problem, and the sensitive nature of the area, "toxic hot spot" status is warranted. Until other data collected by the program is analyzed, it is unknown whether other sites will warrant similar status.

The pollution source associated with the site was rated as "moderate". Although the source of pesticides is from the storage and use of agricultural chemicals, it can not be attributed to a specific discharger. The Harbor was given a moderate "remediation potential" ranking. Although concentrations of persistent pesticides which have been banned may eventually improve without action, those which are still in use may present a continuing problem. Intervention will provide a more immediate solution. The site was given a moderate ranking for Human Health because of elevated pesticide levels. However, though health advisories have not been issued recently, a number of years ago the Harbor was posted with a warning regarding potential fish consumption health risk.

Sediments from Moss Landing Harbor have been documented with high levels of pesticides for a number of years, in some cases at levels which cause concern for human and aquatic life. Concentrations of a number of chemicals in fish and shellfish tissue have exceeded National Academy of Sciences Guidelines and USEPA Screening Values. In addition to pesticides, PCBs(a group of industrial chemicals) have also been identified as a concern in the Harbor and the entire region; they have been detected in shellfish tissue by the State Mussel Watch Program at elevated concentrations for many years. High levels of tributyltin (a currently banned chemical once commonly used in antifouling bottom paint on boats) exceeding the EPA Screening Value of 300 ug/kg, have been detected on occasion at several locations in the Harbor.

The Harbor's watershed supports substantial agricultural activities, which are the major source of pesticides. Several of the pesticides of concern have been banned for many years (Figure 1). Although agricultural chemical types and useages have changed, banned pesticides, particularly chlorinated hydrocarbons, are still

mobilized through eroding sediments. Actions to alleviate this problem consist of proper disposal of dredged materials, source control management measures for the chemicals of concern, and management of erosion of associated sediment.

Figure 1. Use Status of Several Pesticides Found in Elevated Levels at Moss Landing Harbor and in its Watershed.

Chlorpyrifos	Currently in use
Dacthal	Currently in use
Diazinon	Currently in use
Endosulfan	Currently in use (although limited)
Aldrin	
Chlordane	No longer in use
DDT (DDX)	No longer in use
Dieldrin	No longer in use
Endrin	No longer in use
Heptachlor	No longer in use
Toxaphene	No longer in use
	No longer in use

Examples of annual application rates of some pesticides in the Salinas Watershed (from Ganapathy, et al., draft).

Methomyl	63,149 lbs.	(Aug 94-July 95)
Diazinon	62,000 lbs.	(Aug 94–July 95)
Chlorpyrifos	52,095 lbs.	(Aug 94-July 95)
Malathion	42,519 lbs.	(Aug 94-July 95)
Dimethoate	33,024 lbs.	(Aug 94–July 95)
Carbofuran	19,982 lbs.	(Aug 94-July 95)
Endosulfan	2,953 lbs.	(1995)

The Moss Landing area has special status for both state and federal governments. Because of the unique nature of the marine environment within the Monterey Bay area, the National Oceanographic and Atmospheric Administration (NOAA) established a National Marine Sanctuary here in 1992. Elkhorn Slough is a

NOAA National Estuarine Research Reserve. These designations reflect the high resource values found within the area.

Moss Landing Harbor receives drainage water from the Elkhorn Slough watershed, Moro Cojo Slough watershed, Tembladero Slough watershed, and the Old Salinas River. A portion of the flow of the Salinas River enters the Old Salinas River channel by way of a slide gate, influencing Moss Landing Harbor. A number of sites surveyed by the BPTCP in the Region are located within the area which drains to Moss Landing Harbor. Though insufficient data was available from some sites to meet the BPTCP criteria for designation as Toxic Hot Spots (THSs), it is clear that they are impacted by the same chemicals and sources.

A. Assessment of areal extent. (Greater than 10 acres)

The immediate area showing elevated levels of pesticides is the Harbor itself and adjoining sloughs. Organic chemicals are known to bind to fine grained sediment and be transported downstream with sediment. Sandier areas and areas of high tidal flow, such as the Harbor entrance channel, have lower levels of these chemicals (Harding, Lawson & Assoc., 1997). Though a comprehensive areal survey of pollution has not been conducted, it is likely that most fine grained bottom sediments in these water bodies will have similar problems. Water bodies of immediate concern include:

Moss Landing Harbor	160 acres
Old Salinas River Estuary	55 acres
Moro Cojo Slough	345 acres
Elkhorn Slough	2500 acres
Tembladero Slough	150 acres
Salinas River upstream to the Salinas Reclamation Canal	20 miles

The watershed size involved is approximately 250 square miles, a majority of which is agricultural land. This estimate does not include extensive upstream portions of the Salinas watershed, above the City of Salinas. A portion of Salinas River flow drains to the Old Salinas River and thence to Moss Landing Harbor; however, a slide gate near the mouth of the river only permits approximately 250 cubic feet per second to pass to the Old Salinas River (Gilchrist, et al., 1997). This limits the contribution of sediment to Moss Landing.

Most recent dredging studies have identified the highest pollutant concentrations in Moss Landing Harbor sediments extending approximately 2 feet in depth. This harbor has repeatedly been dredged. The fact that high concentrations are found in the top layers of the Harbor imply that they have resulted from fairly recent depositional events. Other areas which have not been similarly dredged may contain pollution at different depths.

B. Assessment of most likely sources of pollutants.

Past and present storage and use of agricultural chemicals is the primary source of pesticides found in Moss Landing Harbor. In the area of interest, sediment runoff from agricultural land is the primary method of transport (Kleinfelder, 1993; NRCS, 1994; AMBAG, 1997). The major erosion problem in Elkhorn Slough stems from loss of top soil from agricultural activities on steep slopes, and the high levels of persistent pesticides mobilized in the system are the most serious environmental problem (Kleinfelder, 1993). Tissue data (Rasmussen, 1995) shows that total DDT values in the southern Harbor increased dramatically after the end of the drought of the mid and late 1980's, to levels close to those of 1982. Other pesticides in tissue follow a similar trend (Figure 2). Nesting failure of the Caspian Tern (a bird species of special interest) in Elkhorn Slough in 1995 was attributed to high tissue levels of DDT resulting from storm-driven sediments.

Though other water bodies in the vicinity of Moss Landing had insufficient data to rank them as "high priority toxic hot spots", it is evident from a review of other sources of data that tributaries to the Harbor are impacted by the same suite of pesticides as is the Harbor. Figure 3 shows selected test results at Sandholdt Bridge for pesticides in shellfish and fish tissue from the State Mussel Watch Program and the Bay Protection and Toxic Cleanup Program, where toxicity or standard exceedances occurred.

Other testing reveals concentrations of chemicals which may also be of concern in the area. Some examples from State Mussel Watch and Toxic Substances Monitoring Program data, documented in Cotter & Strnad (1997), are presented in Figure 4. A more complete representation of this information is found in Appendix 1.

Figure 2. Tissue levels of six pesticides in mussels at Sandholdt Bridge, 1982 - 1995. Measured in parts per billion, wet weight. (only Chlorpyrifos and Dacthal are still in use).

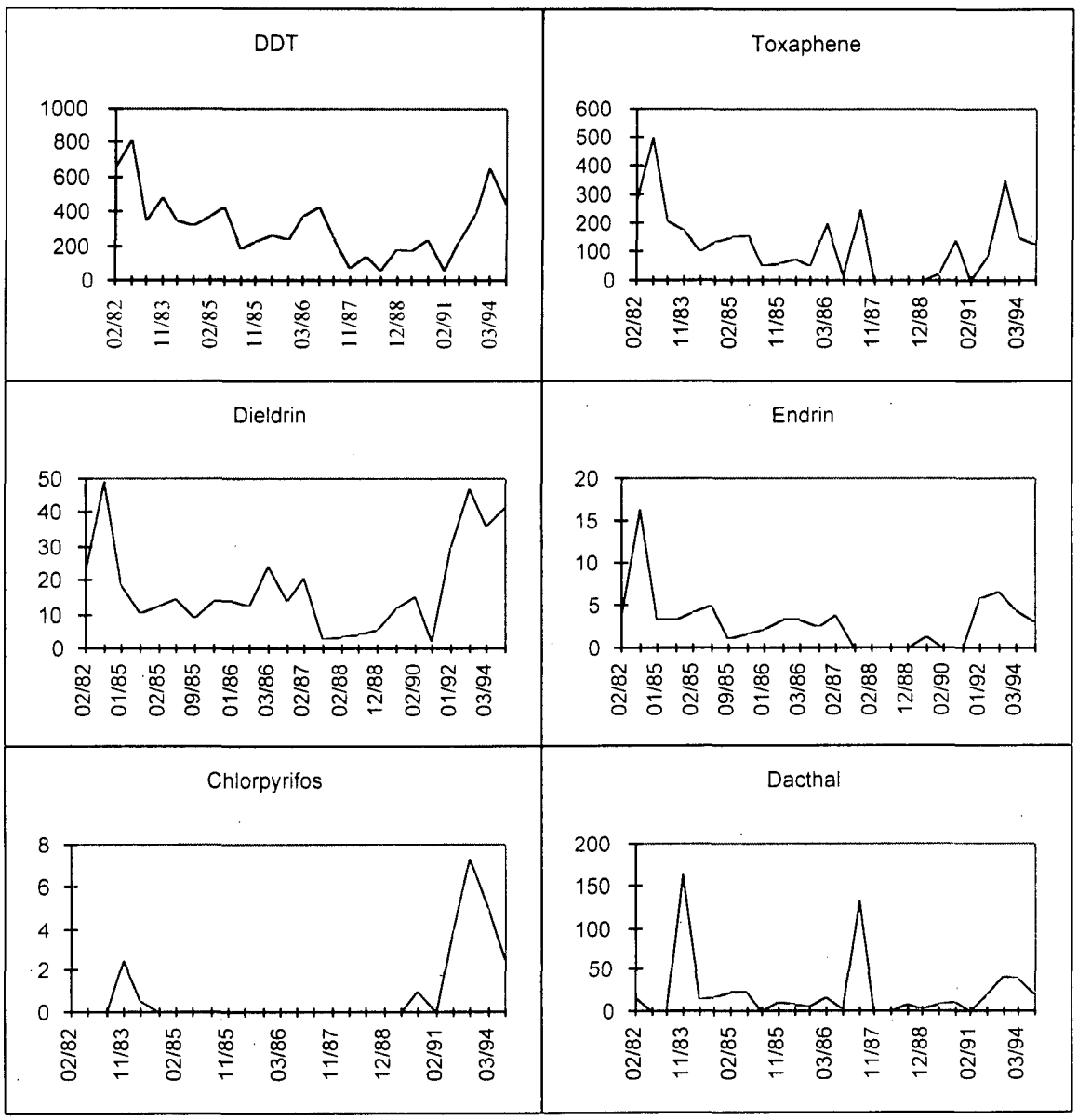

Figure 3. Selected pollutant concentrations and toxicity test results from the State Mussel Watch Program (SMW) and Bay Protection and Toxic Cleanup Program(BPTCP) (measured as parts per billion, wet weight)

Moss Landing - South Harbor (Sandholdt Bridge)

Standard	Date	Std.	Sample	Criteria	Program
Dieldrin	02/16/87	7.0	20.9	EPA Screening (fish & shellfish)	SMW
Dieldrin	01/04/89	7.0	11.5	EPA Screening (fish & shellfish)	SMW
Dieldrin	02/19/90	7.0	15.0	EPA Screening (fish & shellfish)	SMW
Dieldrin	01/28/92	7.0	30.0	EPA Screening (fish & shellfish)	SMW
Dieldrin	02/01/93	7.0	47.0	EPA Screening (fish & shellfish)	SMW
Dieldrin	03/07/94	7.0	36.3	EPA Screening (fish & shellfish)	SMW
Dieldrin	02/22/95	7.0	41.9	EPA Screening (fish & shellfish)	SMW
Dieldrin	05/09/96	8.0	11.8	NOAA ERM	BPTCP
EE_MN	05/09/96	N/A	0.0	Toxicity	BPTCP
RA_MN	12/21/92	N/A	62.0	Toxicity	BPTCP
RA_MN	06/15/94	N/A	39.0	Toxicity	BPTCP

Standard	Date	Std.	Sample	Criteria	Program
RA_MN	06/15/94	N/A	72.0	Toxicity	BPTCP
SPPD100_MN	12/21/92	N/A	15.9	Toxicity	BPTCP
total chlordane	05/09/96	6.0	9.1	NOAA ERM	BPTCP
total DDT	12/21/92	100.0	165.8	NOAA ERM	BPTCP
total DDT	02/01/93	300.0	393.3	EPA Screening (fish & shellfish)	SMW
total DDT	03/07/94	300.0	647.9	EPA Screening (fish & shellfish)	SMW
total DDT	02/22/95	300.0	442.7	EPA Screening (fish & shellfish)	SMW
total DDT	05/09/96	100.0	238.4	NOAA ERM	BPTCP
total PCB	02/16/87	10.0	44.0	EPA Screening (fish & shellfish)	SMW
total PCB	11/05/87	10.0	16.8	EPA Screening (fish & shellfish)	SMW

Figure 3. Selected pollutant concentrations and toxicity test results from the State Mussel Watch Program(SMW) and Bay Protection and Toxic Cleanup Program(BPT) (measured as parts per billion, wet weight)

Moss Landing - South Harbor (Sandholdt Bridge)

Standard	Date	Std.	Sample	Criteria	Program
total PCB	02/02/88	10.0	43.4	EPA Screening (fish & shellfish)	SMW
total PCB	04/07/88	10.0	22.8	EPA Screening (fish & shellfish)	SMW
total PCB	12/08/88	10.0	31.5	EPA Screening (fish & shellfish)	SMW
total PCB	01/04/89	10.0	42.2	EPA Screening (fish & shellfish)	SMW
total PCB	02/19/90	10.0	39.0	EPA Screening (fish & shellfish)	SMW
total PCB	02/04/91	10.0	13.3	EPA Screening (fish & shellfish)	SMW
total PCB	01/28/92	10.0	32.0	EPA Screening (fish & shellfish)	SMW
total PCB	02/01/93	10.0	38.0	EPA Screening (fish & shellfish)	SMW
total PCB	03/07/94	10.0	31.1	EPA Screening (fish & shellfish)	SMW
total PCB	02/22/95	10.0	39.3	EPA Screening (fish & shellfish)	SMW

Standard	Date	Std.	Sample	Criteria	Program
Toxaphene	02/16/87	100.0	250.8	EPA Screening (fish & shellfish)	SMW
Toxaphene	02/19/90	100.0	140.0	EPA Screening (fish & shellfish)	SMW
Toxaphene	02/01/93	100.0	350.0	EPA Screening (fish & shellfish)	SMW
Toxaphene	03/07/94	100.0	147.1	EPA Screening (fish & shellfish)	SMW
Toxaphene	02/22/95	100.0	122.4	EPA Screening (fish & shellfish)	SMW

Figure 4. Examples of elevated levels of chemicals found in fish and shellfish tissue in Moss Landing Harbor or its Tributaries.

Sandholdt Bridge	
Chlorpyrifos	Multiple tests exceed EDL 95**
Dacthal	Multiple tests exceed EDL 95
Endosulfan	Multiple tests exceed EDL 95
Endrin	Multiple tests exceed EDL 95
Heptachlor Epoxide	Multiple tests exceed EDL 95
Moss Landing Yacht Harbor	
Dacthal	Multiple tests exceed EDL 95
Endosulfan	Test exceeds EDL 95
Endrin	Test exceeds EDL 95
Heptachlor Epoxide	Test exceeds EDL 95
Moro Cojo Slough	
Dacthal	Test exceeds EDL 95
Endosulfan	Test exceeds EDL 95
Heptachlor Epoxide	Test exceeds EDL 95
Toxaphene	Test exceeds EDL 95
Tembladero Slough	
Dieldrin	Multiple tests exceed EDL 95
Elkhorn Slough	
Dacthal	Multiple tests exceed EDL 95
Endosulfan	Multiple tests exceed EDL 95
Heptachlor Epoxide	Test exceeds EDL 95
Toxaphene	Test exceeds EDL 95
Old Salinas River	
Dacthal	Test exceeds EDL 95
Endosulfan	Multiple tests exceed EDL 95
Salinas River Reclamation Canal	
Chlordane	Test exceeds EDL 95
Dacthal	Multiple tests exceed EDL 95
DDX	Multiple tests exceed EDL 95
	Tests exceed US FDA Action Level
	Tests exceed USEPA Screening Level
Dieldrin	Multiple tests exceed EDL 95
Endosulfan	Multiple tests exceed EDL 95
Endrin	Multiple tests exceed EDL 95

	Multiple test exceeds FDA Action Level
Toxaphene	Test exceeds EDL 95
	Test exceeds USEPA screening level

**EDL95 indicates an Elevated Data Level; This indicates that the test results exceed 95% of statewide concentrations found by the program which performed the testing (State Mussel Watch Program, and/or Toxic Substances Monitoring Program). This level may or may not represent a violation of standards.

C. A summary of actions that have been initiated by the Regional Board to reduce the accumulation of pollutants at Moss Landing Harbor and to prevent the creation of new THSs.

The Regional Board has long been involved in activities to address water quality issues in the Moss Landing area. Currently, the Regional Board has listed Moss Landing Harbor, Elkhorn Slough, Espinosa Slough, Moro Cojo Slough, Old Salinas River Estuary, Salinas River Lagoon, Salinas River Reclamation Canal, and Tembladero Slough on the 303(d) list of water quality limited water bodies. All of these water bodies are listed for pesticides and other problems. The Salinas River watershed, which contributes some flow to the Harbor, is identified in the Watershed Management Initiative as the Region's top priority watershed for staffing focus. Pesticides are identified as one of the issues of concern for the Salinas watershed.

The Regional Board is a signatory of a Memorandum of Agreement between agencies which deals with water quality activities within the Monterey Bay National Marine Sanctuary and its watersheds. Protecting the water quality of the Sanctuary is one of the key goals of this federal program. The Regional Board participates in a number of programs related to Sanctuary efforts, including its Water Quality Protection Program (WQPP). The WQPP is developing and carrying out Action Plans to address water quality needs related to Urban Runoff, Agriculture, and Boating and Marinas within the Sanctuary. All these documents contain information pertinent to the problems identified at Moss Landing Harbor.

A number of other programs have been initiated in the past decade to address erosion and pesticide problems impacting Moss Landing Harbor. The Regional Board has been involved in funding or providing technical support for many of these programs. Numerous land management plans have been developed for the various watersheds and tributaries within the Moss Landing watershed, and extensive effort has been dedicated to education, outreach, and technical assistance to agricultural landowners and operators. A summary of actions related to dredging activities and upland land management is provided below.

Dredging

Existing Waste Discharge Requirements for the Moss Landing Harbor District, U.S. Army of Corps of Engineers, and Pacific Gas and Electric, contain prohibitions and limitations for the protection of beneficial uses. Up to 100,000 cubic yards of dredged material is authorized for unconfined aquatic disposal. Dredge material is sometimes used for beach replenishment, or disposed of offshore at one of two areas. The disposal areas are located within the Monterey Bay National Marine Sanctuary and authorization to dispose of material at these sites is allowed under a grandfather clause. Past dredging activities have occurred since the early 1950's, but there have been no focused studies of unconfined aquatic disposal of inner harbor material, and ultimate impacts are unknown.

Past sampling and analysis reveal varying levels of pesticides present in inner harbor sediments. Review of recent monitoring data resulted in several regulatory agencies, including the U.S. Environmental Protection Agency and the Monterey Bay National Marine Sanctuary, expressing concerns regarding the suitability of the material for unconfined aquatic disposal. The Harbor District has tried unsuccessfully to locate and secure property for upland disposal. Dredging of inner harbor fine grain sediments has not occurred within the past five years. Harbor navigability has suffered, resulting in reduced access during low tides and boat damage.

The Regional Board has cooperated with other regulatory agencies in an effort to develop a sediment sampling and disposal suitability plan for the Monterey area. The Regional Board's role is well defined, although specific criteria are unavailable for suitability determinations. The basis of Board approval is a determination of beneficial use protection. The Regional Board also reviews Army Corps permitted activity, pursuant to the Clean Water Act Section 401 Water Quality Certification Program. The Board participated in a meeting with U.S. EPA, U.S. Army Corps of Engineers, California Dept. of Fish and Game, the California Coastal Commission, and Monterey Bay National Marine Sanctuary, to discuss a possible sediment testing and disposal plan for harbors within Monterey Bay. Efforts to date have not been fruitful and no current plans exist for development of a testing plan.

Upland Pesticide And Erosion Management

The Regional Board has been implementing its nonpoint source program in the tributaries to Moss Landing for a number of years. Regional Board staff are implementing the following nonpoint source control objectives (included in the State Nonpoint Source Management Plan) as components of the Central Coast Basin Plan:

A. Control of nonpoint source pollution through outreach, education, public participation, technical assistance, financial assistance, interagency coordination, demonstration projects, and regulatory activities.

B. Preparation of contracts, management and technical assistance for projects selected for grant funding.

C. Implementation of the Coastal Zone Act Reauthorization Amendments.

D. Initiation of nonpoint source watershed pilot programs.

Salinas Watershed Team

Recently the Regional Board designated the Salinas watershed as its top priority watershed in the Region, as part of the statewide Watershed Management Initiative. The Salinas River watershed is one of the sources of the problems in the Moss Landing area. The Regional Board has committed substantial staff time and resources towards watershed management in the Salinas River watershed. The Regional Board has given the Salinas River watershed priority for receipt of grant funding under Sections 205(j) and 319(h) of the Clean Water Act. Several projects are underway and some will be funded in the next fiscal year.

A staff team was formed in January 1996 to coordinate programmatic work, including permit writing, enforcement, water quality certifications, landfills, underground tanks, cleanups, and watershed management plan development. The team has written a two-year Strategy to develop a

Watershed Management Action Plan. In addition to carrying out existing regulatory responsibilities in the watershed and implementing other watershed activities, the team has met three of the important milestones that were set out in the Strategy. These include: 1) preparing a comprehensive stakeholder list; 2) preparing an inventory which describes all of the agencies, organizations and groups that are active in the watershed, their authority and interests and their current activities and projects; and 3) preparing a preliminary description and assessment of water resource issues in the Salinas River Watershed.

Team staff are also involved in facilitating grant funding, supporting and participating in the activities of the Water Quality Protection Program of the Monterey Bay National Marine Sanctuary, coordinating with the Central Coast Regional Monitoring Program, participating and supporting education and outreach efforts, and coordinating with other agencies on permit streamlining.

Contract management of 319(h) grants is an important component of the Team's effort, with two current contracts (awarded in 1997) and three new contracts (to be awarded in 1998) in the Salinas River Watershed. One of the contracts awarded in 1997 will address non-point source pollution through use of restored wetlands as filters for pollutants and as ground water recharge areas. The other will reduce nitrate loading to ground water through demonstrating and promoting agricultural best management practices. Contracts to be awarded in 1998 will address 1) citizen monitoring in the watersheds of the Monterey Bay National Marine Sanctuary, including the Salinas River Watershed, 2) problems of erosion and sedimentation on the east side of the Salinas Valley, and 3) the need for an expedited permitting process to encourage implementation of agricultural best management practices for reduction of erosion and sedimentation.

Water Quality Protection Program for the Monterey Bay National Marine Sanctuary

The National Oceanic and Atmospheric Administration, which oversees the Monterey Bay National Marine Sanctuary, has spearheaded a cooperative effort of many agencies and entities working in the watersheds of the Sanctuary. The Sanctuary's Water Quality Protection Program is currently

involved in work with the agricultural community to develop an Action Plan to better protect water quality in agricultural areas. The Regional Board has been an active participant in these meetings. A number of meetings have been held with the agricultural community to acquire its input during the plan development process. The Action Plan will include recommendations for reducing sedimentation and pesticide runoff from agricultural lands, including a variety of management measures, such as development of buffer areas adjacent to waterways, reducing storm water runoff, and installation of grassed waterways and field roads. The plan will focus on a variety of ways to encourage adoption of these kinds of Best Management Practices through improvements in technical training, education, economic incentives, regulatory coordination, etc. A draft workbook is currently being circulated for discussion purposes.

The Water Quality Protection Program has also developed action plans to address water quality impacts related to urban areas, and marinas and boating. Full implementation of these plans will help address problems related to tributyltin and PCBs found in the Harbor.

Regional Board staff are members of the WQPP Water Quality Council. Staff attend meetings and have worked with other Council members in developing and reviewing strategies to address issues related to agriculture.

Clean Water Act Section 319(h) and 205(j) Grants

A number of projects have been undertaken in the affected area using Clean Water Act (CWA) funding, provided by the United States Environmental Protection Agency and administered by the State and Regional Boards. Some of these projects include the Elkhorn Slough Agricultural Watershed Demonstration Program (1997), the Northern Salinas Valley Watershed Restoration Plan (1997), the Moro Cojo Slough Management and Enhancement Plan (1996), and the Elkhorn Slough Uplands Water Quality Management Plan (1993).

The Elkhorn Slough Agricultural Watershed Demonstration Program was developed by the State Coastal Conservancy and the Elkhorn Slough Foundation. This project included implementation of a series of BMP's on agricultural lands in Elkhorn Slough watershed, including filter strips,

sediment basins, farm road revegetation and realignment, and riparian corridor restoration. The project also included developing a characterization of the agricultural system in cooperation with U.C. Santa Cruz, the Elkhorn Slough Foundation and the Nature Conservancy, developing a demonstration project and associated agricultural/environmental education outreach program, and coordinating with the activities of various agencies.

A 205(j) grant was obtained by the Association of Monterey Bay Area Governments (AMBAG) to develop the "Northern Salinas Valley Watershed Restoration Plan. The Watershed Restoration Plan discusses pesticide pollution entering Moss Landing Harbor through its southern tributaries, including the Salinas River, Tembladero Slough, and Moro Cojo Slough, and recommends Best Management Practices to help alleviate this problem. The program emphasizes the use of "wet corridors" as a means of reducing sediment delivery to waterways. A number of Best Management Practices have been installed associated with this plan.

The Moro Cojo Slough Management and Enhancement Plan was prepared for the State Coastal Conservancy and Monterey County and was funded by a number of agencies, including the State Board. This document examines several alternative plans for management of the lower slough and recommends Best Management Practices for implementation in the entire watershed.

The Elkhorn Slough Uplands Water Quality Management Plan, conducted for AMBAG, examined the effectiveness of Best Management Practices at reducing pesticide runoff from strawberry fields on study sites in the Elkhorn Slough watershed, and makes recommendations for Land Use Policies and implementation of Best Management Practices.

A CWA 319(h) proposal by the Monterey County Resource Conservation District has recently received State Board approval for the 1998-99 grant cycle. This project will include implementation of Best Management Practices for erosion control on the east side of Salinas in the vicinity of Old Stage Road. The Farm Services Agency and the Natural Resources Conservation Service of the U.S. Department of Agriculture designated the Old Stage Road area as a priority area for cost sharing under the 1997-98

Environmental Quality Incentive Program.

Other Agency Activities

The Natural Resources Conservation Service (NRCS) and Monterey County Resource Conservation District have been involved in technical assistance and bilingual educational outreach to the growers in the Elkhorn and Moro Cojo Slough watersheds, through the Elkhorn Slough Watershed Project (1994). This project focuses particularly on outreach to ethnic minority farmers and strawberry growers. Its goal is to produce a fifty percent reduction in erosion, sediment, and sediment-borne pesticides. It strives to reconcile some of the socio-economic factors hindering adoption of BMPs, including high land rental and production costs, leasing arrangements and unfamiliarity with technical services and opportunities.

The Elkhorn Slough Wetlands Management Plan (1989) was funded by the State Coastal Conservancy and the County of Monterey. This document describes problems in Elkhorn Slough resulting from erosion, pesticides, bacteria and sea water intrusion, describes enhancement plans for five major wetlands in the Slough, plans for public access, and proposed implementation for management problem areas. It includes a lengthy discussion of pesticide use in Elkhorn Slough and the Salinas River area.

The Salinas River Lagoon Management and Enhancement Plan (MCWRA, 1997) was developed for the Monterey County Water Resources Agency and the Salinas River Lagoon Task Force, with funding provided by a number of agencies. This document describes natural resources of the area, as well as some land management issues of concern associated with this lagoon. The document encourages the participation of Task Force members in the WQPP planning process, and recommends that an Interagency/Property Owners Management Committee be formed to ensure implementation of the Management Plan.

A Memorandum of Understanding is currently being developed between the Monterey County Resource Conservation District and the California Department of Fish and Game for implementation of voluntary erosion control measures within the Elkhorn Slough watershed. The U.S. Army Corps of Engineers and the CCRWQCB have developed a region wide

CWA 401-404 waiver for activities in and around streams associated with these restoration efforts.

Summary - A large number of planning and implementation activities have been undertaken in the tributaries to the Moss Landing Harbor to specifically address erosion control and pesticide management issues. Some of these have been done at a "demonstration" scale on public lands, but other projects have been on private lands working with the cooperation of local landowners. All of these plans identify erosion and pesticide movement as a major problem, and all recommend various land treatments to help mediate the problem. These activities are an extremely important component of watershed restoration. The implementation of these plans should be continued, in order to achieve the long-term improvements which are needed in the watershed.

D. Preliminary Assessment of Actions required to remedy or restore Moss Landing Harbor to an unpolluted condition.

Dredging

Ongoing deposition of sediments in the inner harbor which originate in upland watershed areas will continue to disrupt navigation. This material will continue to present a problem, as it contains bioavailable pesticides and other pollutants. Recent recommendations by commenting agencies have resulted in the Harbor District trying to secure an upland site for disposal of inner harbor material. This practice is cost prohibitive for the Harbor District. The long term impact of the inability of the Harbor District to dredge sediment from the inner harbor is potential closure of the harbor and resulting impacts to a viable fishing industry and other harbor interests. The best long term solution is source control of sediment within the watershed.

Given the existing regulatory framework, several conclusions seem apparent:

1. Dredging of inner harbor material is necessary to restore and maintain navigation (a designated beneficial use) and to protect aquatic life and human health beneficial uses.

Action: Request the Army Corps of Engineers conduct a reconnaisance study to determine the fate, transport, and biological impact of dredge spoils disposed of in designated sites. Base future sediment disposal suitability decisions on study results.

2. Harbor viability is threatened by the excessive cost associated with upland dredge disposal, and costs are borne by parties not primarily responsible for the pollution.

   Action: The State and federal government should assist the Harbor District financially in establishing upland disposal sites, if it is determined by the regulatory agencies to be the preferred alternative to unconfined aquatic disposal. Among other alternatives, the State and/or federal government could provide funds for acquisition of marginal and excessively erodible farm land for use as restored wetland buffer areas and dredge spoil disposal sites.

3. Statewide maximum concentration levels for pesticides in sediments are necessary to aid regulatory agencies in authorizing unconfined aquatic disposal of dredged sediment.

   Action: Promulgated Maximum Concentration Levels would aid regulators in approving dredge disposal projects and making sound, consistent disposal suitability decisions. Alternatively, a multi-agency agreement between the State and Regional Boards, the Army Corps of Engineers, and the U.S. Environmental Protection Agency which establishes Maximum Concentration Levels for chemicals of concern in sediment, tissue, and water would facilitate this process. Clear standards would also benefit dredge project proponents by reducing uncertainty factors, the costs of studies, and the time between project conceptualization and implementation.

   In the long run, a spoil disposal evaluation method, which employs specific standards, should be created that balances the needs for dredge project cost reductions and beneficial use protection.

Nonpoint Source Pollution Control

The nonpoint source problems of primary concern in Moss Landing Harbor and its tributaries are pesticides from agricultural sources, the erosion of sediment which contains these chemicals and the deposition of the sediment. At some sites, other pollutants such as tributyltin and copper are present, which are often associated with boats and boat yard activities.

Actions by the Regional Water Quality Control Board

Nonpoint Source Management - Consistent with the 1988 State Board Nonpoint Source Management Plan, Region 3 advocates three approaches for addressing nonpoint source management in the tributaries to Moss Landing Harbor (from the Central Coast Basin Plan).

1. Voluntary implementation of Best Management Practices

   Property owners or managers may volunteer to implement Best Management Practices.

2. Enforcement of Best Management Practices

   Although the California Porter-Cologne Water Quality Control Act constrains Regional Boards from specifying the manner of compliance with water quality standards, there are two ways in which Regional Boards can use their regulatory authorities to encourage implementation of Best Management Practices.

   First, the Regional Board may encourage Best Management Practices by waiving adoption of waste discharge requirements on condition that dischargers utilize Best Management Practices. Alternatively, the Regional Board may enforce the use of Best Management Practices indirectly by entering into management agreements with other agencies which have the authority to enforce the use of Best Management Practices.

3. Adoption of Effluent Limitations

The Regional Board can adopt and enforce requirements on the nature of any proposed or existing waste discharge, including discharges from nonpoint sources. Although the Regional Board is constrained from specifying the manner of compliance with waste discharge limitations, in appropriate cases, limitations may be set at a level which, in practice, requires the implementation of Best Management Practices.

In general, the Regional Board approach to addressing sediment and its associated pollutants follows the three tiered approach. The voluntary approach is predominantly utilized, with resources committed to planning, educational outreach, technical assistance, cost-sharing and BMP implementation.

Salinas River Watershed Team Strategy - To further the restoration process in the tributaries to Moss Landing Harbor the Regional Board will continue with implementation of the Salinas River Watershed Team Strategy. The scope of this effort should be expanded to include the other tributaries to Moss Landing Harbor. This expansion will not be feasible without the addition of another staff person to the team. Funding for this person is included in the estimates of cleanup costs in Section E of this Cleanup Plan.

Several pertinent excerpts from the Salinas strategy are detailed below. The document is included in its entirety in Appendix 2.

The Central Coast Regional Board established the Salinas River Watershed Team to implement a watershed management approach to address water resource issues in the Salinas River Watershed. The Team's approach is based on the Watershed Planning model presented by UC Davis Extension, Land Use Program, and has many components of the Coordinated Resource Management Planning (CRMP) model already implemented and modified by many communities in California. To implement this approach, the Team will investigate and focus on non-point source water pollution concerns while continuing to address regulatory commitments for point source pollution within the watershed.

From the Salinas River Watershed Team Strategy (1996):

The Team's goal is ***to promote integrated/coordinated water resource protection, enhancement, and restoration in the Salinas River Watershed.*** The general steps to accomplish this goal include the following:

1. Implement Existing Regulatory Responsibilities Within the Watershed
2. Implement Watershed Activities
3. Characterize The Watershed
4. Identify and Evaluate Water Resource Issues/Areas
5. Develop a Watershed Management Action Plan
6. Implement the Plan
7. Evaluate Progress

Tasks 1 and 2 of the Strategy are related in detail below because of their relevance to this Section of the Cleanup Plan.

TASK 1. <u>Implement Existing Regulatory Responsibilities Within the Salinas Watershed</u>

Current responsibilities are as follows:

- o Conduct site/facility inspections
- o Conduct aerial surveillance program
- o Respond to citizen complaints
- o Respond to incidents
- o Investigate problem discharges and suspected problem areas
- o Review and track self-monitoring reports
- o Review special reports, design plans, closure plans, etc.
- o Review Clean Water Act Section 401 Water Quality Certifications
- o Review Environmental Impact Reports and other California Environmental Quality Act Documents
- o Review and revise monitoring programs
- o Review Reports of Waste Discharge for new discharges
- o Prepare new WDR/NPDES permits for Board approval
- o Revise existing WDR/NPDES permits

- o Prepare enforcement actions
- o Oversee leaking underground tank and toxic spill site investigations and clean-ups

TASK 2. Implement Watershed Activities

Subtask 2.a. Facilitate Funding. Facilitate 205(j) and 319(h) funding to nonpoint source pollution problems in the watershed by coordinating goals, interests and expertise of agencies and organizations working on these problems. The Team will also facilitate funding from other sources as it becomes available.

Subtask 2.b. Support Water Quality Protection Program Efforts. Support implementation of existing action plans and development of additional action plans of the National Oceanic and Atmospheric Administration, Monterey Bay National Marine Sanctuary, Water Quality Protection Program (WQPP) in the following ways:

Subtask 2.b.i. Data Sharing. Join the effort of the Association of Monterey Bay Area Governments (AMBAG) and other water quality planning and management agencies in a commitment to electronically share data by signing AMBAG's Memorandum of Agreement for Data Transfer. Additional related involvement would include attending meetings and responding to the information requests and needs of the Joint Data Committee, to the extent possible.

Subtask 2.b.ii. Urban Runoff. Participate in development and region-wide promotion of a Model Urban Runoff Program for small municipalities within the watershed. Although not in the Salinas Watershed, such an effort is currently being developed by a partnership among the Cities of Monterey and Santa Cruz, the WQPP, and the California Coastal Commission with 319(h) funding.

Subtask 2.b.iii. Education/Outreach. Participate in public education/outreach efforts (e.g., attend workshops, give presentations, help prepare and disseminate information), especially technical training events focusing on implementation of best management practices to minimize or reduce nonpoint source pollution. Such efforts are currently being

developed and organized by the WQPP for urban runoff and marinas and boating.

Subtask 2.b.iv. Agricultural Activities. Participate in development of and support current efforts to develop and implement appropriate actions to minimize and prevent impacts to water resources from agricultural activities (e.g., attend workshops, meet with grower/shipper/rancher organizations and individuals, meet with RCDs and other local agencies, provide technical and financial assistance to the extent possible).

Subtask 2.c. Standardize Salinas River Maintenance Activities. Facilitate establishment of a standardized approach to permitting Salinas River in-channel (and near-channel) maintenance activities to protect water quality by meeting with land owners/operators and other permitting/approval agencies to consider guidance/standard conditions for Clean Water Act Section 401 Water Quality Certification, watershed-wide permits, general permits, and waste discharge requirements.

Subtask 2.d. Investigate Establishment of Information Phone Line. Explore the possibility of establishing a watershed information phone line and/or an 800 phone number to direct other agency personnel, land owner/operators, dischargers and members of the public to appropriate agencies, technical experts, or references.

Subtask 2.e. Coordinate with Other Agencies Regarding Regulatory/Permitting Issues. Participate in interagency discussions to make watershed activities more user-friendly, and to develop solutions to identified regulatory concerns such as streamlining permit applications, permit review and issuance procedures; consideration of reduced or new permitting mechanisms (such as watershed-wide or general permits.

Subtask 2.f. Coordinate with Other Groups Regarding Existing Water Quality Improvement Efforts. Participate in, support, and administer funding for water quality improvements efforts initiated by various entities within the watershed. Such groups include AMBAG, the Moss Landing Marine Laboratory, and the California State University, Monterey Bay, Watershed Institute.

Subtask 2.g. Address Monitoring Programs. Review and revise discharger self-monitoring programs to improve integration with other watershed programs.

Actions by Other Agencies

1. Continue technical support, cost-sharing, project implementation

   Many activities and planning efforts are already underway by other agencies in the tributaries to Moss Landing Harbor, and have been described in this report. The Regional Board supports many of these activities through funding, technical support, or other means. It is important that implementation activities be continued and whenever possible, accelerated. The importance of education and outreach can not be overemphasized. Providing and facilitating funding for these efforts is a priority action of this cleanup plan.

   Agricultural nonpoint source pollution is diffuse by nature and is generated from a variety of crop types and land use configurations. Landowner attitudes towards government involvement in private property management vary considerably. It is important that a number of tools be available for implementing solutions and that a wide variety of approaches be applied by various agencies. These may include development of land management plans, cost sharing programs, educational programs, technical support programs, demonstration projects, land easement acquisition programs, purchase of critical areas for floodplain restoration and wetland buffer development, and so on.

   A feasibility study/design proposal should be developed for acquisition of land for development as wetland catchment areas, restored flood plains, sediment detention basins, and other land treatment measures, to detain polluted sediments before they reach sensitive aquatic resources. Maintenance of such areas represent an ongoing cost which will be partially offset by reduced need for erosion damage repair in the watershed and maintenance dredging in the Harbor.

The Monterey Bay National Marine Sanctuary Water Quality Protection Program has developed an action plan which recommends management measures for boating and marina activities Implementation by the Harbor District, boat owners, and boat yard owners will contribute to reduction of pollutants resulting from harbor activities.

2. Coordinate Activities

A number of agencies have developed land management plans and are already actively involved in erosion control activities in the tributaries to Moss Landing. Many of these documents list Best Management Practices and make recommendations for site specific implementation projects. To ensure that the numerous management plans developed for this area are implemented in a coordinated and effective fashion, it is recommended that a single agency, such as the MBNMS Water Quality Protection Program or the Association of Monterey Bay Area Governments, assume a leadership role. For example, specific implementation actions recommended in the various plans could be prioritized, evaluated for cost effectiveness, and incorporated into the WQPP's Agricultural Action Plan or other document, which could then serve as a master timeline for implementation.

3. Employ Land Use Policies

Local agencies can utilize land use policies and ordinances to provide incentives for retirement of marginal or highly erodible agricultural lands which are sources of sediment and pollutants, such as those on high slopes.

Local agencies should utilize erosion control policies and ordinances to discourage activities which create excessive soil erosion.

Actions by Private Landowners

In general, private landowners are concerned with soil loss and pesticide use, for both environmental and economic reasons. Excessive or

inappropriate use of pesticides can increase operating costs. Excessive soil erosion can increase land maintenance costs and result in irreversible impacts to land productivity. It has been estimated that strawberry farmers in the Elkhorn Slough watershed lose $1.7 million per year as a result of soil erosion (NRCS, 1994). Many landowners are familiar with Integrated Pest Management and basic erosion control practices and have worked with the Natural Resources Conservation Service and other technical agencies on land management issues. However, many of the smaller acreage farmers are unfamiliar with use of government assistance, and are unsure how to obtain such assistance (NRCS, 1994).

Pesticides are a continuing problem in Moss Landing Harbor, and many pesticides are currently being used upstream. Banned pesticides have been seen to increase in Harbor sediments following large rainfall events, indicating they are still being carried in sediment runoff. The implication remains that not enough is being done to adequately correct the problems of excessive erosion and the transport of sediment borne pollutants.

Many practices exist which can reduce the delivery of pesticides to waterways. It is not the intent of this document to present a comprehensive list of practices that should be implemented. Many sources of guidance are available which address this issue. Also, these practices must be selected and tailored to the specific conditions at each site, combining the expertise of the grower/rancher and technical outreach agents as necessary. Some of the major approaches which can be utilized by the agricultural community are summarized below:

1. Work with the Natural Resources Conservation Service and other agricultural extension agencies to develop land management plans which address both economic and environmental concerns.

2. Maintain a vegetative buffer area between creek drainages and agricultural activities. Wider buffer areas should be utilized adjacent to larger creeks.

3. Revegetate drainageways with grass or suitable wetland vegetation.

4. If levees are utilized, set them back from creek channels to provide a

flood plain within the area of channelized flow.

5. Restore channelized areas wherever possible to a natural flood plain condition.

6. Seek funding for riparian enhancement or easement development to offset financial losses from land conversion immediately adjacent to creek areas.

7. Utilize cover crops and grassed field roads during winter months to reduce soil erosion and pesticide runoff during rain events.

8. Utilize low till and no till farming practices wherever feasible.

9. Monitor land for evidence of heavy soil loss; implement control measures as needed.

10. Use sediment basins and other detention or retention devices to help capture sediment before it leaves the property.

11. Reduce overall use of pesticides; utilize integrated pest management practices.

12. Time application of pesticides to minimize runoff.

13. Avoid overspraying and spraying when wind can transport chemicals.

14. Make use of cost sharing programs and available technical assistance to address erosion control problems and pesticide application issues.

15. Wherever possible, retire steeply sloped farm land to grazing or other, less erosive uses.

16. Work with the Monterey Bay National Marine Sanctuary Water Quality Protection Program, to ensure that the action plans developed for protection of water quality in the Sanctuary reflect agricultural needs and issues.

E. An estimate of the total costs to implement the cleanup plan

Dredging Costs

While the normal costs of dredging are part of ongoing operation and maintenance of the harbor, the incremental cost increases which result from requirements for special handling of pesticide polluted sediments should be viewed as a "clean up" cost. Unconfined aquatic disposal of dredge spoils at offshore sites typically costs $3 per cubic yard of material. Upland disposal of dredge spoils is estimated at $30 per cubic yard of material (J. Stillwell, pers. comm., 1997). Most recent estimates of the amount of material showing high levels of pesticides have ranged around 10,000 cubic yards.

Watershed Management Practice Implementation Costs

The overall area of the Moss Landing watershed used for this cost estimate is approximately 250 square miles. Since no overall site specific design has been created, the cost estimates (Figure 5) were derived by evaluating several local land improvement plans and extrapolating costs contained in those plans to other areas of similar land use. Some elements of these plans are already being implemented, and recalculations based on these activities would reduce overall clean up cost estimates.

The two plans evaluated to provide a basis for the estimates contained in this document are:

1. Elkhorn Slough Uplands Water Quality Management Plan (Kleinfelder, 1993)

   This plan estimates that implementation of Best Management Practices in the area will cost between $1,000 and $1,500 per acre of land treated.

2. Elkhorn Slough Watershed Project (SCS, 1994)

This plan includes the Elkhorn Slough and Moro Cojo Slough watersheds. It estimates implementation costs at about $650 per acre. It proposes to reduce erosion and the resulting transport of sediment and sediment borne pesticides by 50%. The estimated existing sediment load of 80,000 tons per year to the sloughs and wetlands would be reduced to 40,000 tons per year. The estimated existing sediment load of 40,000 tons per year to roads and roadside ditches would be reduced to 20,000 tons per year. The plan encompasses a 44,900 acre portion of the Moss Landing Watershed, of which approximately 10,000 acres are agricultural land and 5,450 acres are proposed for treatment. The plan emphasizes agricultural land treatment measures, and gives special attention to strawberry growing operations in the area.

In addition to providing remediation for some of the problems in Moss Landing, this plan estimates that its implementation would reduce the cost of erosion damage on strawberry lands by an average of $1,100,000 per year, public road cleanup costs by $64,000 per year and traffic delay costs by $9,000 per year. A summary cost breakdown for capital expenses to implement this plan follows:

Land treatment measure costs	$1,410,000
Technical assistance costs	$2,130,000
Total Installation Costs	$3,540,000

The total acreage of agricultural land in the Tembladero Slough and lower Salinas River area was roughly estimated at 24,490 acres. 12,465 of these acres are proposed for treatment. This ratio of agricultural land to proposed treatment land is similar to that employed by NRCS (1994). Though Kleinfelder (1993) cites a higher treatment cost per acre, the NRCS estimate of $650 per acre was employed because of the flatter overall topography of the Tembladero and lower Salinas area. NRCS indicates that this flatter topography could reduce per acre treatment cost to as low as $500 (D. Mountjoy, pers. comm. 1997). Figure 5 shows estimates of total costs, based on the above scenario. The use of a highly focused,

results-oriented implementation management approach, which gives high priority to projects which produce maximum benefits, will have a significant impact on overall costs. Existing activities which are already underway will also reduce total costs.

Figure 5. Overall BMP Implementation Cost Estimate

Elkhorn Slough Watershed Plan and Environmental Assessment (SCS 1994)	**$**
Land treatment measure costs	1,410,000
Technical assistance costs	2,130,000
Total Installation costs	3,540,000
Tembladero Slough and Lower Salinas River (using SCS 1994 as basis, for an estimated 12,465 acres of treated land)	
Land treatment measure costs	3,227,262
Technical assistance costs	4,875,226
Total Installation costs	8,102,487
Overall Costs (for an estimated 17,900 agricultural treatment acres)	
Elkhorn & Moro Cojo Slough areas	3,540,000
Tembladero & Lower Salinas areas	8,102,487
Agricultural Education Program	235,000
Total Program Cost	11,877,487

F. An estimate of recoverable costs from potential dischargers

Moss Landing Harbor District currently bears the financial burden of dredging polluted sediments from the Harbor, though it is not Harbor activities which contribute the major source of pollutants. Non-point source pollution remediation measures ultimately require non-point source funding alternatives.

Currently, there is no plan to issue waste discharge requirements or otherwise permit agricultural land uses in the tributaries to Moss Landing Harbor. Consequently, no directly recoverable costs are anticipated from agricultural land owners. However, if voluntary compliance continues to be inadequate to address pollution problem in the Harbor, regulatory action may be considered at some point, particularly for individual landowners whose actions are shown to cause significant impact. The RWQCB has existing authority to issue such action, under the Porter Cologne Act Water Quality Control Act.

Implementation of management measures to control erosion is most frequently carried out by a combination of public and private sector funds. A variety of cost sharing programs exist which would be employed as a part of the overall funding strategy. These cost sharing programs generally require a project proponent share of 25% to 50% of the overall project cost. Many of the needed management measures produce continuing economic benefits to landowners and land users. Accordingly, a portion of the land treatment cost is expected to be absorbed by individuals and organizations which receive the most direct benefit from the land treatment measures.

The cleanup plan funding strategy should be developed in a fashion which provides the greatest possible inducements for private and public sector investment, and should include a spectrum of grants, fees, tax incentives, and public-private partnerships. In the case of management measures which produce a predictable return on investment, State Revolving Funds could be used as temporary financing to encourage private and public sector investment by amortizing implementation costs. Other mechanisms, such as conservation banking and mitigation banking, can combine many small sources of funding into an asset pool capable of supporting larger scale projects.

G. A two-year expenditure schedule identifying funds to implement the plans that are not recoverable from potential dischargers.

Year 1

Expenditures in the first year of the program would be largely committed to identifying and prioritizing specific implementation measures and thus would not include private sector financial support. First year expenses would include the addition of one full time position for the Region 3 Planning staff, and staff time expenditures by several other agencies. The Region 3 staff position would be dedicated to "land treatment implementation management". The staff position would be added to the Salinas Team and the individual would be charged with the compilation of a prioritized candidate project list for remediation of the Moss Landing pesticide problem. This list would include financing and performance monitoring options for each project. Projects eligible for this list would be limited to operations which involve specifically defined physical alterations to land and land management practices. Funding for educational outreach should be directed to the WQPP, Cooperative Extension, or other outreach organization.

CCRWQB	135,000
MBNMS	25,000
NRCS	25,000
ACOE Reconnaissance Study	0
Nat. Estuarian Research Reserve	15,000
EPA	50,000
Total First Year Cost	250,000

Year 2

The second year budget reflects the shift from BMP identification and prioritization to actual implementation.

CCRWQB	135,000
MBNMS	125,000
NRCS	200,000
ACOE Reconnaissance Study	100,000
Nat. Estuarine Research Reserve	50,000
Land Treatment Measures	750,000
Total Second Year Cost	1,360,000

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Appendix I - Levels of pesticides in tissues taken from agricultural areas and from estuarine areas which are tributary to Moss Landing Harbor. Monitoring data collected by the State Mussel Watch (SMW), State Toxic Substances Monitoring Program (TSM), and the State Bay Protection and Toxic Cleanup Program (BPT). FSH - Fish Tissue, TIS - Shellfish or Fish Tissue, SED - Sediment, TCM - Transplanted California Mussel, RBM - Resident Bay Mussel, TOX - Toxicity, TFC - Transplanted Freshwater Clams, OYS - Oysters (measured in parts per billion, wet weight).

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Alisal Slough/West Salinas	NAS (fish)	FSH	07/25/88	chemical group A	5.0	516.4	TSM
Alisal Slough/West Salinas	FDA Action Level (fish & shellfish)	TIS	07/25/88	chemical group A	300.0	516.4	TSM
Alisal Slough/West Salinas	NAS (fish)	FSH	07/25/88	dieldrin	5.0	77.0	TSM
Alisal Slough/West Salinas	EPA Screening (fish & shellfish)	TIS	07/25/88	dieldrin	7.0	77.0	TSM
Alisal Slough/West Salinas	NAS (fish)	FSH	07/25/88	endosulfan sulfate	50.0	130.0	TSM
Alisal Slough/West Salinas	NAS (fish)	FSH	07/25/88	total DDT	50.0	2349.0	TSM
Alisal Slough/West Salinas	EPA Screening (fish & shellfish)	TIS	07/25/88	total DDT	300.0	2349.0	TSM
Alisal Slough/West Salinas	NAS (fish)	FSH	07/25/88	total endosulfan	50.0	130.0	TSM
Alisal Slough/West Salinas	NAS (fish)	FSH	07/25/88	toxaphene	50.0	300.0	TSM
Alisal Slough/West Salinas	EPA Screening (fish & shellfish)	TIS	07/25/88	toxaphene	100.0	300.0	TSM
Azevedo Pond	EPA Screening (fish & shellfish)	TCM	02/25/93	dieldrin	7.0	47.0	SMW
Azevedo Pond	EPA Screening (fish & shellfish)	TCM	02/25/93	total of PCB arochlors	10.0	13.0	SMW
EGRET LANDING REP2	Toxicity	TOX	06/15/94	RA_MN	75.0	69.0	BPT

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
EGRET LANDING REP3	Toxicity	TOX	06/15/94	RA_MN	75.0	53.0	BPT
EGRET LANDING- REF	NOAA ERM	SED	10/09/92	NICKEL	51.6	100.0	BPT
EGRET LANDING- REF	Toxicity	TOX	10/09/92	RA_MN	75.0	64.0	BPT
ELKHORN SL. PORTRERO REF.	NOAA ERM	SED	12/18/92	NICKEL	51.6	55.0	BPT
Elkhorn Slough	NAS (fish)	FSH	07/27/88	chemical group A	5.0	110.0	TSM
Elkhorn Slough	EPA Screening (fish & shellfish)	TCM	11/23/83	dieldrin	7.0	18.4	SMW
Elkhorn Slough	NAS (fish)	FSH	07/27/88	endosulfan sulfate	50.0	110.0	TSM
Elkhorn Slough	NAS (fish)	FSH	07/27/88	total endosulfan	50.0	110.0	TSM
Elkhorn Slough- Seal Bend	Toxicity	TOX	09/11/92	RA_MN	75.0	67.0	BPT
Elkhorn Slough- Seal Point	Toxicity	TOX	09/04/92	RA_MN	75.0	74.0	BPT
Elkhorn Slough- Seal Point	Toxicity	TOX	09/04/92	RA_MN	75.0	75.0	BPT
Elkhorn Slough/Highway 1 Bridge	EPA Screening (fish & shellfish)	TCM	05/29/80	total of PCB arochlors	10.0	12.9	SMW
Elkhorn Slough/Highway 1 Bridge	EPA Screening (fish & shellfish)	TCM	11/24/80	total of PCB arochlors	10.0	20.8	SMW
Elkhorn Slough/Highway 1 Bridge	EPA Screening (fish & shellfish)	TCM	01/15/85	total of PCB arochlors	10.0	20.7	SMW
Elkhorn Slough/Highway 1 Bridge	EPA Screening (fish & shellfish)	TCM	01/29/87	total of PCB arochlors	10.0	11.3	SMW
Elkhorn Slough/Pacific Mariculture	EPA Screening (fish & shellfish)	RBM	03/26/79	total of PCB arochlors	10.0	15.5	SMW
Elkhorn Slough/Pacific Mariculture	EPA Screening (fish & shellfish)	RBM	02/13/81	total of PCB arochlors	10.0	25.2	SMW
Elkhorn Slough/Pacific Mariculture	EPA Screening (fish & shellfish)	OYS	02/07/84	total of PCB arochlors	10.0	12.8	SMW
Elkhorn Slough/Pacific Mariculture	EPA Screening (fish & shellfish)	OYS	03/20/85	total of PCB arochlors	10.0	17.9	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Elkhorn Slough/Tidal Pond	EPA Screening (fish & shellfish)	TCM	02/25/93	dieldrin	7.0	20.0	SMW
Espinosa Slough	NAS (fish)	FSH	06/15/84	chemical group A	5.0	635.2	TSM
Espinosa Slough	FDA Action Level (fish & shellfish)	TIS	06/15/84	chemical group A	300.0	635.2	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	chemical group A	5.0	1296.9	TSM
Espinosa Slough	FDA Action Level (fish & shellfish)	TIS	07/26/88	chemical group A	300.0	1296.9	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TFC	11/28/83	dieldrin	7.0	156.0	SMW
Espinosa Slough	NAS (fish)	FSH	06/15/84	dieldrin	5.0	83.6	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	06/15/84	dieldrin	7.0	83.6	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	dieldrin	5.0	140.0	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	dieldrin	7.0	140.0	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	endosulfan II	50.0	88.0	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	endosulfan sulfate	50.0	590.0	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	endrin	5.0	30.0	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	heptachlor epoxide	5.0	7.9	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	06/15/84	PCB arochlor 1254	10.0	85.6	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	PCB arochlor 1260	10.0	50.0	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TFC	11/28/83	total DDT	300.0	2189.3	SMW
Espinosa Slough	NAS (fish)	FSH	06/15/84	total DDT	50.0	585.0	TSM
Espinosa Slough	EPA Screening	TIS	06/15/84	total DDT	300.0	585.0	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	(fish & shellfish)						
Espinosa Slough	NAS (fish)	FSH	07/26/88	total DDT	50.0	1112.0	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	total DDT	300.0	1112.0	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	total endosulfan	50.0	687.6	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TFC	11/28/83	total of PCB arochlors	10.0	114.4	SMW
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	06/15/84	total PCB	10.0	85.6	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	total PCB	10.0	50.0	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TFC	11/28/83	toxaphene	100.0	2288.0	SMW
Espinosa Slough	NAS (fish)	FSH	06/15/84	toxaphene	50.0	517.3	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	06/15/84	toxaphene	100.0	517.3	TSM
Espinosa Slough	NAS (fish)	FSH	07/26/88	toxaphene	50.0	400.0	TSM
Espinosa Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	toxaphene	100.0	400.0	TSM
HIGHWAY 1 BRIDGE- REF	NOAA ERM	SED	10/23/92	NICKEL	51.6	52.0	BPT
HWY 1 BRIDGE REF.	Toxicity	TOX	01/14/93	SPPD100_MN	75.0	25.6	BPT
Lower Tembladero Slough	NAS (fish)	FSH	08/23/83	chemical group A	5.0	45.1	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	chemical group A	5.0	495.0	TSM
Lower Tembladero Slough	FDA Action Level (fish & shellfish)	TIS	06/13/84	chemical group A	300.0	495.0	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	chemical group A	5.0	518.9	TSM
Lower Tembladero Slough	FDA Action Level (fish & shellfish)	TIS	06/13/84	chemical group A	300.0	518.9	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Lower Tembladero Slough	NAS (fish)	FSH	08/23/83	dieldrin	5.0	30.8	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	08/23/83	dieldrin	7.0	30.8	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	dieldrin	5.0	47.6	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	dieldrin	7.0	47.6	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	dieldrin	5.0	39.7	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	dieldrin	7.0	39.7	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	endrin	5.0	21.8	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	PCB arochlor 1254	10.0	57.5	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	PCB arochlor 1254	10.0	53.6	TSM
Lower Tembladero Slough	NAS (fish)	FSH	08/23/83	total DDT	50.0	153.0	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	total DDT	50.0	518.6	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	total DDT	300.0	518.6	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	total DDT	50.0	507.4	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	total DDT	300.0	507.4	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	total PCB	10.0	57.5	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	total PCB	10.0	53.6	TSM
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	toxaphene	50.0	396.6	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	toxaphene	100.0	396.6	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Lower Tembladero Slough	NAS (fish)	FSH	06/13/84	toxaphene	50.0	446.8	TSM
Lower Tembladero Slough	EPA Screening (fish & shellfish)	TIS	06/13/84	toxaphene	100.0	446.8	TSM
M.L. SOUTH HARBOR	NOAA ERM	SED	12/21/92	NICKEL	51.6	96.0	BPT
M.L. SOUTH HARBOR	Toxicity	TOX	12/21/92	RA_MN	75.0	74.0	BPT
M.L. SOUTH HARBOR	Toxicity	TOX	12/21/92	SPPD100_MN	75.0	69.4	BPT
M.L. YACHT HARBOR	NOAA ERM	SED	12/21/92	NICKEL	51.6	88.0	BPT
M.L. YACHT HARBOR	Toxicity	TOX	12/21/92	RA_MN	75.0	56.0	BPT
Moro Cojo	EPA Screening (fish & shellfish)	TCM	01/04/89	dieldrin	7.0	20.9	SMW
Moro Cojo	EPA Screening (fish & shellfish)	RBM	12/15/82	total DDT	300.0	470.6	SMW
Moro Cojo	EPA Screening (fish & shellfish)	TCM	01/04/89	total of PCB arochlors	10.0	12.0	SMW
Moro Cojo	EPA Screening (fish & shellfish)	RBM	12/15/82	toxaphene	100.0	697.5	SMW
MORO COJO SLOUGH	NOAA ERM	SED	12/22/92	NICKEL	51.6	86.0	BPT
MORO COJO SLOUGH	Toxicity	TOX	12/22/92	RA_MN	75.0	67.0	BPT
MORO COJO SLOUGH	Toxicity	TOX	12/22/92	SPPD100_MN	75.0	0.0	BPT
Moss Landing Harbor	NAS (fish)	FSH	08/07/90	total DDT	50.0	53.0	TSM
Moss Landing/Ag Drain/Blanco dstrm	FDA Action Level (fish & shellfish)	TFC	10/24/84	dieldrin	300.0	468.0	SMW
Moss Landing/Ag Drain/Blanco dstrm	EPA Screening (fish & shellfish)	TFC	10/24/84	dieldrin	7.0	468.0	SMW
Moss Landing/Ag Drain/Blanco dstrm	EPA Screening (fish & shellfish)	TFC	10/24/84	total DDT	300.0	2350.4	SMW
Moss Landing/Ag Drain/Blanco dstrm	FDA Action Level (fish & shellfish)	TFC	10/24/84	Total Group A	300.0	497.5	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Moss Landing/Ag Drain/Blanco dstrm	EPA Screening (fish & shellfish)	TFC	10/24/84	total of PCB arochlors	10.0	77.0	SMW
Moss Landing/Ag Drain/Blanco dstrm	EPA Screening (fish & shellfish)	TFC	10/24/84	toxaphene	100.0	613.6	SMW
Moss Landing/Ag Drain/Davis Rd	EPA Screening (fish & shellfish)	TFC	12/05/85	dieldrin	7.0	20.9	SMW
Moss Landing/Ag Drain/Davis Rd	EPA Screening (fish & shellfish)	TFC	12/11/86	dieldrin	7.0	92.4	SMW
Moss Landing/Ag Drain/Davis Rd	EPA Screening (fish & shellfish)	TFC	12/11/86	total of PCB arochlors	10.0	22.0	SMW
Moss Landing/Ag Drain/Davis Rd	EPA Screening (fish & shellfish)	TFC	12/11/86	toxaphene	100.0	102.8	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	10/24/84	dieldrin	7.0	129.6	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	12/11/86	dieldrin	7.0	100.1	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	10/24/84	total DDT	300.0	422.4	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	12/11/86	total DDT	300.0	406.0	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	10/24/84	total of PCB arochlors	10.0	49.0	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	12/11/86	total of PCB arochlors	10.0	55.0	SMW
Moss Landing/Ag Drain/Espinosa	EPA Screening (fish & shellfish)	TFC	10/24/84	toxaphene	100.0	540.0	SMW
Moss Landing/Ag Drain/Old River	EPA Screening (fish & shellfish)	TFC	10/24/84	dieldrin	7.0	26.9	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Moss Landing/Ag Drain/Old River	EPA Screening (fish & shellfish)	TFC	10/24/84	total of PCB arochlors	10.0	19.9	SMW
Moss Landing/South Harbor	EPA Screening (fish & shellfish)	TCM	02/02/88	tributyltin	300.0	1339.6	SMW
Moss Landing/South Harbor	EPA Screening (fish & shellfish)	TCM	01/04/89	tributyltin	300.0	380.0	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	RBM	11/28/83	dieldrin	7.0	32.8	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	TCM	01/29/87	dieldrin	7.0	38.0	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	TCM	01/04/89	dieldrin	7.0	14.2	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	RBM	11/28/83	total DDT	300.0	435.1	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	RBM	11/28/83	total of PCB arochlors	10.0	40.9	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	TCM	01/29/87	total of PCB arochlors	10.0	19.0	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	TCM	01/04/89	total of PCB arochlors	10.0	11.4	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	RBM	11/28/83	toxaphene	100.0	210.6	SMW
Moss Landing/Yacht Harbor	EPA Screening (fish & shellfish)	TCM	01/29/87	tributyltin	300.0	750.0	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/16/92	dieldrin	7.0	53.0	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/10/93	dieldrin	7.0	70.0	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/16/92	total DDT	300.0	520.8	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/10/93	total DDT	300.0	450.6	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/16/92	total of PCB arochlors	10.0	29.0	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/10/93	total of PCB arochlors	10.0	51.0	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/16/92	toxaphene	100.0	260.0	SMW
Old Salinas River 1	EPA Screening (fish & shellfish)	TFC	03/10/93	toxaphene	100.0	540.0	SMW
Old Salinas River 2	EPA Screening (fish & shellfish)	TFC	03/10/93	total of PCB arochlors	10.0	15.0	SMW
Old Salinas River Channel 1	EPA Screening (fish & shellfish)	TFC	11/28/83	dieldrin	7.0	45.0	SMW
Old Salinas River Channel 1	EPA Screening (fish & shellfish)	TFC	11/28/83	total DDT	300.0	1551.0	SMW
Old Salinas River Channel 1	EPA Screening (fish & shellfish)	TFC	11/28/83	total of PCB arochlors	10.0	98.0	SMW
Old Salinas River Channel 1	EPA Screening (fish & shellfish)	TFC	11/28/83	toxaphene	100.0	760.0	SMW
Old Salinas River/Molera Road	NAS (fish)	FSH	06/14/84	chemical group A	5.0	19.9	TSM
Old Salinas River/Molera Road	NAS (fish)	FSH	06/14/84	dieldrin	5.0	19.9	TSM
Old Salinas River/Molera Road	EPA Screening (fish & shellfish)	TIS	06/14/84	dieldrin	7.0	19.9	TSM
Old Salinas River/Molera Road	NAS (fish)	FSH	06/14/84	total DDT	50.0	131.6	TSM
Old Salinas River/Monterey Dunes	NAS (fish)	FSH	08/24/83	chemical group A	5.0	3526.4	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Way Brg							
Old Salinas River/Monterey Dunes Way Brg	FDA Action Level (fish & shellfish)	TIS	08/24/83	chemical group A	300.0	3526.4	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	dieldrin	5.0	335.8	TSM
Old Salinas River/Monterey Dunes Way Brg	FDA Action Level (fish & shellfish)	TIS	08/24/83	dieldrin	300.0	335.8	TSM
Old Salinas River/Monterey Dunes Way Brg	EPA Screening (fish & shellfish)	TIS	08/24/83	dieldrin	7.0	335.8	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	endosulfan I	50.0	58.5	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	endosulfan sulfate	50.0	748.4	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	endrin	5.0	115.1	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	heptachlor epoxide	5.0	10.6	TSM
Old Salinas River/Monterey Dunes Way Brg	EPA Screening (fish & shellfish)	TIS	08/24/83	PCB arochlor 1254	10.0	153.5	TSM
Old Salinas River/Monterey Dunes Way Brg	EPA Screening (fish & shellfish)	TIS	08/24/83	PCB arochlor 1260	10.0	76.8	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	total chlordane	50.0	144.9	TSM
Old Salinas River/Monterey Dunes Way Brg	EPA Screening (fish & shellfish)	TIS	08/24/83	total chlordane	80.0	144.9	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	total DDT	50.0	2184.8	TSM
Old Salinas River/Monterey Dunes	EPA Screening (fish &	TIS	08/24/83	total DDT	300.0	2184.8	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Way Brg	shellfish)						
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	06/14/84	total DDT	50.0	81.8	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	total endosulfan	50.0	806.9	TSM
Old Salinas River/Monterey Dunes Way Brg	EPA Screening (fish & shellfish)	TIS	08/24/83	total PCB	10.0	230.3	TSM
Old Salinas River/Monterey Dunes Way Brg	NAS (fish)	FSH	08/24/83	toxaphene	50.0	2110.9	TSM
Old Salinas River/Monterey Dunes Way Brg	EPA Screening (fish & shellfish)	TIS	08/24/83	toxaphene	100.0	2110.9	TSM
Parson's Slough	EPA Screening (fish & shellfish)	TCM	11/23/83	dieldrin	7.0	11.8	SMW
Parson's Slough	EPA Screening (fish & shellfish)	TCM	02/25/93	dieldrin	7.0	24.0	SMW
Parson's Slough	EPA Screening (fish & shellfish)	TCM	02/25/93	total of PCB arochlors	10.0	15.0	SMW
Parson's Slough	EPA Screening (fish & shellfish)	TCM	11/27/82	toxaphene	100.0	130.7	SMW
Parson's Slough	EPA Screening (fish & shellfish)	TCM	02/25/93	toxaphene	100.0	130.0	SMW
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	chemical group A	5.0	1416.6	TSM
Salinas Rec Canal/u/s Tembladero Slough	FDA Action Level (fish & shellfish)	TIS	07/26/88	chemical group A	300.0	1416.6	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	dieldrin	5.0	220.0	TSM
Salinas Rec Canal/u/s Tembladero	EPA Screening (fish &	TIS	07/26/88	dieldrin	7.0	220.0	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Slough	shellfish)						
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	endosulfan II	50.0	80.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	endosulfan sulfate	50.0	240.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	endrin	5.0	30.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	heptachlor epoxide	5.0	12.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	PCB arochlor 1260	10.0	54.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	total DDT	50.0	1128.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	total DDT	300.0	1128.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	total endosulfan	50.0	328.4	TSM
Salinas Rec Canal/u/s Tembladero Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	total PCB	10.0	54.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	NAS (fish)	FSH	07/26/88	toxaphene	50.0	790.0	TSM
Salinas Rec Canal/u/s Tembladero Slough	EPA Screening (fish & shellfish)	TIS	07/26/88	toxaphene	100.0	790.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	chemical group A	5.0	1582.9	TSM
Salinas Reclamation Canal/Airport Road	FDA Action Level (fish & shellfish)	TIS	10/01/86	chemical group A	300.0	1582.9	TSM
Salinas Reclamation Canal/Airport	NAS (fish)	FSH	08/13/87	chemical group A	5.0	2074.4	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Road							
Salinas Reclamation Canal/Airport Road	FDA Action Level (fish & shellfish)	TIS	08/13/87	chemical group A	300.0	2074.4	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	dieldrin	5.0	220.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	10/01/86	dieldrin	7.0	220.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	dieldrin	5.0	490.0	TSM
Salinas Reclamation Canal/Airport Road	FDA Action Level (fish & shellfish)	TIS	08/13/87	dieldrin	300.0	490.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	08/13/87	dieldrin	7.0	490.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	endosulfan I	50.0	60.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	endosulfan I	50.0	51.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	endosulfan sulfate	50.0	120.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	endosulfan sulfate	50.0	110.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	endrin	5.0	63.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	endrin	5.0	58.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	heptachlor epoxide	5.0	9.4	TSM
Salinas Reclamation Canal/Airport	EPA Screening (fish &	TIS	10/01/86	PCB arochlor 1254	10.0	120.0	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Road	shellfish)						
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	10/01/86	PCB arochlor 1260	10.0	120.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	08/13/87	PCB arochlor 1260	10.0	160.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	total chlordane	50.0	56.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	total DDT	50.0	4067.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	10/01/86	total DDT	300.0	4067.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	total DDT	50.0	4046.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	08/13/87	total DDT	300.0	4046.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	total endosulfan	50.0	180.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	08/13/87	total endosulfan	50.0	161.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	10/01/86	total PCB	10.0	240.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	08/13/87	total PCB	10.0	160.0	TSM
Salinas Reclamation Canal/Airport Road	NAS (fish)	FSH	10/01/86	toxaphene	50.0	1100.0	TSM
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	10/01/86	toxaphene	100.0	1100.0	TSM
Salinas Reclamation Canal/Airport	NAS (fish)	FSH	08/13/87	toxaphene	50.0	1300.0	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Road							
Salinas Reclamation Canal/Airport Road	EPA Screening (fish & shellfish)	TIS	08/13/87	toxaphene	100.0	1300.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/14/84	chemical group A	5.0	1025.9	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	06/14/84	chemical group A	300.0	1025.9	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	chemical group A	5.0	7287.3	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	06/04/85	chemical group A	300.0	7287.3	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	chemical group A	5.0	1931.0	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	10/01/86	chemical group A	300.0	1931.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	chemical group A	5.0	1703.8	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	08/11/87	chemical group A	300.0	1703.8	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/14/84	dieldrin	5.0	109.4	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/14/84	dieldrin	7.0	109.4	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	dieldrin	5.0	315.9	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	06/04/85	dieldrin	300.0	315.9	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/04/85	dieldrin	7.0	315.9	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	dieldrin	5.0	490.0	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	10/01/86	dieldrin	300.0	490.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	10/01/86	dieldrin	7.0	490.0	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	dieldrin	5.0	380.0	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	08/11/87	dieldrin	300.0	380.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	08/11/87	dieldrin	7.0	380.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	endosulfan I	50.0	91.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	endosulfan II	50.0	74.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	endrin	5.0	54.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	endrin	5.0	58.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	endrin	5.0	99.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	heptachlor epoxide	5.0	9.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	heptachlor epoxide	5.0	17.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	heptachlor epoxide	5.0	27.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/14/84	PCB arochlor 1254	10.0	179.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	PCB arochlor 1254	500.0	671.2	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/04/85	PCB arochlor 1254	10.0	671.2	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	10/01/86	PCB arochlor 1254	10.0	120.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/04/85	PCB arochlor 1260	10.0	157.9	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	10/01/86	PCB arochlor 1260	10.0	61.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	08/11/87	PCB arochlor 1260	10.0	70.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	total chlordane	50.0	186.3	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish &	TIS	06/04/85	total chlordane	80.0	186.3	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	shellfish)						
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	total chlordane	50.0	101.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	10/01/86	total chlordane	80.0	101.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	total chlordane	50.0	91.9	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	08/11/87	total chlordane	80.0	91.9	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/14/84	total DDT	50.0	1229.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/14/84	total DDT	300.0	1229.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	total DDT	50.0	8883.9	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	06/04/85	total DDT	5000.0	8883.9	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/04/85	total DDT	300.0	8883.9	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	total DDT	50.0	2473.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	10/01/86	total DDT	300.0	2473.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	total DDT	50.0	3068.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	08/11/87	total DDT	300.0	3068.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	total endosulfan	50.0	165.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/14/84	total PCB	10.0	179.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	total PCB	500.0	829.2	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/04/85	total PCB	10.0	829.2	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish &	TIS	10/01/86	total PCB	10.0	181.0	TSM

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	shellfish)						
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	08/11/87	total PCB	10.0	70.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/14/84	toxaphene	50.0	875.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/14/84	toxaphene	100.0	875.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	06/04/85	toxaphene	50.0	6712.3	TSM
Salinas Reclamation Canal/Davis Road	FDA Action Level (fish & shellfish)	TIS	06/04/85	toxaphene	5000.0	6712.3	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	06/04/85	toxaphene	100.0	6712.3	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	10/01/86	toxaphene	50.0	1100.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	10/01/86	toxaphene	100.0	1100.0	TSM
Salinas Reclamation Canal/Davis Road	NAS (fish)	FSH	08/11/87	toxaphene	50.0	1100.0	TSM
Salinas Reclamation Canal/Davis Road	EPA Screening (fish & shellfish)	TIS	08/11/87	toxaphene	100.0	1100.0	TSM
Salinas/Reclamation Canal 2	EPA Screening (fish & shellfish)	TFC	11/20/85	dieldrin	7.0	194.4	SMW
Salinas/Reclamation Canal 2	EPA Screening (fish & shellfish)	TFC	11/20/85	total DDT	300.0	766.6	SMW
Salinas/Reclamation Canal 2	EPA Screening (fish & shellfish)	TFC	11/20/85	total of PCB arochlors	10.0	119.9	SMW
Salinas/Reclamation Canal 2	EPA Screening (fish & shellfish)	TFC	11/20/85	toxaphene	100.0	1296.0	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	11/20/85	dieldrin	7.0	88.2	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish &	TFC	12/11/86	dieldrin	7.0	200.0	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	shellfish)						
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	02/03/88	dieldrin	7.0	192.0	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	12/11/86	total DDT	300.0	1814.0	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	02/03/88	total DDT	300.0	999.2	SMW
Salinas/Reclamation Canal 3	FDA Action Level (fish & shellfish)	TFC	12/11/86	Total Group A	300.0	500.0	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	11/20/85	total of PCB arochlors	10.0	20.8	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	12/11/86	total of PCB arochlors	10.0	500.0	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	02/03/88	total of PCB arochlors	10.0	96.0	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	11/20/85	toxaphene	100.0	522.9	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	12/11/86	toxaphene	100.0	173.4	SMW
Salinas/Reclamation Canal 3	EPA Screening (fish & shellfish)	TFC	02/03/88	toxaphene	100.0	2480.0	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	11/20/85	dieldrin	7.0	102.0	SMW
Salinas/Reclamation Canal 4	FDA Action Level (fish & shellfish)	TFC	12/11/86	dieldrin	300.0	308.0	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	12/11/86	dieldrin	7.0	308.0	SMW
Salinas/Reclamation Canal 4	FDA Action Level (fish &	TFC	02/03/88	dieldrin	300.0	396.0	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	shellfish)						
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	02/03/88	dieldrin	7.0	396.0	SMW
Salinas/Reclamation Canal 4	FDA Action Level (fish & shellfish)	TFC	12/11/86	endrin	300.0	374.0	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	02/03/88	total chlordane	80.0	143.2	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	11/20/85	total DDT	300.0	512.6	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	12/11/86	total DDT	300.0	3249.3	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	02/03/88	total DDT	300.0	2556.9	SMW
Salinas/Reclamation Canal 4	FDA Action Level (fish & shellfish)	TFC	12/11/86	Total Group A	300.0	682.6	SMW
Salinas/Reclamation Canal 4	FDA Action Level (fish & shellfish)	TFC	02/03/88	Total Group A	300.0	435.2	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	11/20/85	total of PCB arochlors	10.0	42.0	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	12/11/86	total of PCB arochlors	10.0	165.0	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	02/03/88	total of PCB arochlors	10.0	82.8	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	11/20/85	toxaphene	100.0	1080.0	SMW
Salinas/Reclamation Canal 4	FDA Action Level (fish & shellfish)	TFC	12/11/86	toxaphene	5000.0	6572.0	SMW
Salinas/Reclamation Canal 4	EPA Screening (fish &	TFC	12/11/86	toxaphene	100.0	6572.0	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	shellfish)						
Salinas/Reclamation Canal 4	EPA Screening (fish & shellfish)	TFC	02/03/88	toxaphene	100.0	3510.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/24/82	dieldrin	7.0	22.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	11/23/83	dieldrin	7.0	49.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/16/85	dieldrin	7.0	18.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	dieldrin	7.0	10.5	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	dieldrin	7.0	12.4	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	dieldrin	7.0	14.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	09/18/85	dieldrin	7.0	8.7	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/18/85	dieldrin	7.0	13.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	01/16/86	dieldrin	7.0	14.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/16/86	dieldrin	7.0	12.7	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	03/28/86	dieldrin	7.0	24.4	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/24/86	dieldrin	7.0	14.0	SMW
Sandholdt Bridge	EPA Screening (fish &	RBM	02/16/87	dieldrin	7.0	20.9	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
	shellfish)						
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/04/89	dieldrin	7.0	11.5	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/19/90	dieldrin	7.0	15.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/28/92	dieldrin	7.0	30.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/01/93	dieldrin	7.0	47.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	03/07/94	dieldrin	7.0	36.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/22/95	dieldrin	7.0	41.9	SMW
Sandholdt Bridge	NOAA ERM	SED	05/09/96	DIELDRIN	8.0	11.8	BPT
Sandholdt Bridge	Toxicity	TOX	05/09/96	EE_MN	75.0	0.0	BPT
Sandholdt Bridge	NOAA ERM	SED	12/21/92	NICKEL	51.6	100.0	BPT
Sandholdt Bridge	Toxicity	TOX	12/21/92	RA_MN	75.0	62.0	BPT
Sandholdt Bridge	Toxicity	TOX	12/21/92	SPPD100_MN	75.0	15.9	BPT
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/24/82	total DDT	300.0	657.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/17/82	total DDT	300.0	817.9	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	12/15/82	total DDT	300.0	350.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	11/23/83	total DDT	300.0	484.7	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/16/85	total DDT	300.0	342.9	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	total DDT	300.0	324.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	total DDT	300.0	374.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	total DDT	300.0	424.1	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	03/28/86	total DDT	300.0	369.2	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/24/86	total DDT	300.0	432.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/01/93	total DDT	300.0	393.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	03/07/94	total DDT	300.0	647.9	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/22/95	total DDT	300.0	442.7	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/24/82	total of PCB arochlors	10.0	39.7	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	11/23/83	total of PCB arochlors	10.0	46.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/16/85	total of PCB arochlors	10.0	31.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	total of PCB arochlors	10.0	26.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	total of PCB arochlors	10.0	40.6	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	total of PCB arochlors	10.0	39.0	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	09/18/85	total of PCB arochlors	10.0	55.1	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/18/85	total of PCB arochlors	10.0	39.4	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	01/16/86	total of PCB arochlors	10.0	42.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/16/86	total of PCB arochlors	10.0	47.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	03/28/86	total of PCB arochlors	10.0	53.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/24/86	total of PCB arochlors	10.0	34.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/16/87	total of PCB arochlors	10.0	44.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/05/87	total of PCB arochlors	10.0	16.8	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/02/88	total of PCB arochlors	10.0	43.4	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	04/07/88	total of PCB arochlors	10.0	22.8	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	12/08/88	total of PCB arochlors	10.0	31.5	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/04/89	total of PCB arochlors	10.0	42.2	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/19/90	total of PCB arochlors	10.0	39.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/04/91	total of PCB arochlors	10.0	13.3	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	01/28/92	total of PCB arochlors	10.0	32.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/01/93	total of PCB arochlors	10.0	38.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	03/07/94	total of PCB arochlors	10.0	31.1	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/22/95	total of PCB arochlors	10.0	39.3	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/24/82	toxaphene	100.0	272.8	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	11/17/82	toxaphene	100.0	504.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	12/15/82	toxaphene	100.0	205.7	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	11/23/83	toxaphene	100.0	178.1	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	toxaphene	100.0	133.1	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	toxaphene	100.0	152.4	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/20/85	toxaphene	100.0	156.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	03/28/86	toxaphene	100.0	199.8	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	RBM	02/16/87	toxaphene	100.0	250.8	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/19/90	toxaphene	100.0	140.0	SMW

Sampling Site	Criteria	Media	Date	Pollutant	Std	Samp	Prog
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/01/93	toxaphene	100.0	350.0	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	03/07/94	toxaphene	100.0	147.1	SMW
Sandholdt Bridge	EPA Screening (fish & shellfish)	TCM	02/22/95	toxaphene	100.0	122.4	SMW
Sandholdt Bridge	NOAA ERM	SED	05/09/96	TTL_CHLR	6.0	9.1	BPT
Sandholdt Bridge	NOAA ERM	SED	12/21/92	TTL_DDT	100.0	165.8	BPT
Sandholdt Bridge	NOAA ERM	SED	05/09/96	TTL_DDT	100.0	238.4	BPT
Sandholdt Bridge	Toxicity	TOX	06/15/94	RA_MN	75.0	39.0	BPT
Sandholdt Bridge	Toxicity	TOX	06/15/94	RA_MN	75.0	72.0	BPT
Tembladero Slough	EPA Screening (fish & shellfish)	TFC	03/10/93	dieldrin	7.0	68.0	SMW
Tembladero Slough	EPA Screening (fish & shellfish)	TFC	03/10/93	total DDT	300.0	397.8	SMW
Tembladero Slough	EPA Screening (fish & shellfish)	TFC	03/10/93	total of PCB arochlors	10.0	48.0	SMW
Tembladero Slough	EPA Screening (fish & shellfish)	TFC	03/10/93	toxaphene	100.0	660.0	SMW

STATE WATER RESOURCES CONTROL BOARD

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CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
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10/97