Notice of Completion & Environmental Document Transmittal

Appendix C

For U.S. Mail: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH# 99062069

Project Title: Coast Seafoods Continued Mariculture in Humboldt Bay

Lead Agency: Humboldt Bay Harbor District
Contact Person: Dave Hull
Mailing Address: P.O. Box 1030
Phone: 707-443-0801
City: Eureka Zip: 95502-1030
County: Humboldt

Project Location:

County: Humboldt
City/Nearest Community: Arcata and Eureka
Total Acres: 300
Cross Streets:
Zip Code:
Assessor's Parcel No.
Section: 1, 2, 11, 12 Twp. 5N Range: 1W Base: Humboldt
Within 2 miles: State Hwy#: 101, 255
Waterways: Located within Humboldt Bay tidelands
Airports: Murray Field
Railways: NCRA
Schools:

Document Type:

CEQA:
- ☐ NOP
- ☐ Early Cons
- ☐ Neg Dec
- ☒ Mit Neg Dec
- ☐ Draft EIR
- ☐ Supplement to EIR
- ☐ Subsequent EIR
- ☐ Other:

NEPA:
- ☐ NOI
- ☐ EA
- ☐ Draft EIS
- ☐ FONSI

Other:
- ☐ Joint Document
- ☐ Final Document
- ☐ Other:

Local Action Type:
- ☐ General Plan Update
- ☐ General Plan Amendment
- ☐ General Plan Element
- ☐ Community Plan
- ☐ Specific Plan
- ☐ Master Plan
- ☐ Planned Unit Development
- ☐ Site Plan
- ☐ Rezone
- ☐ Prezone
- ☒ Use Permit
- ☐ Land Division (Subdivision, etc.)
- ☐ Annexation
- ☐ Redevelopment
- ☐ Coastal Permit
- ☐ Other:

Development Type:
- ☐ Residential: *Units* ____ *Acres* ____
- ☐ Office: *Sq.ft.* ____ *Acres* ____ *Employees* ____
- ☐ Commercial: *Sq.ft.* ____ *Acres* ____ *Employees* ____
- ☐ Industrial: *Sq.ft.* ____ *Acres* ____ *Employees* ____
- ☐ Educational
- ☐ Recreational
- ☐ Water Facilities: *Type* ____ *MGD* ____
- ☐ Transportation: *Type* ____
- ☐ Mining: *Mineral* ____
- ☐ Power: *Type* ____ *MW* ____
- ☐ Waste Treatment: *Type* ____ *MGD* ____
- ☐ Hazardous Waste: *Type* ____
- ☒ Other: Mariculture operations

Project Issues That May Have A Significant Or Potentially Significant Impact:
- ☐ Aesthetic/Visual
- ☐ Agricultural Land
- ☒ Air Quality
- ☐ Archeological/Historical
- ☒ Biological Resources
- ☐ Coastal Zone
- ☐ Drainage/Absorption
- ☐ Economic/Jobs
- ☐ Fiscal
- ☐ Flood Plain/Flooding
- ☐ Forest Land/Fire Hazard
- ☐ Geologic/Seismic
- ☐ Minerals
- ☐ Noise
- ☐ Population/Housing Balance
- ☐ Public Services/Facilities
- ☐ Recreation/Parks
- ☐ Schools/Universities
- ☐ Septic Systems
- ☐ Sewer Capacity
- ☐ Soil Erosion/ Compaction/Grading
- ☐ Solid Waste
- ☒ Toxic/Hazardous
- ☐ Traffic/Circulation
- ☐ Vegetation
- ☒ Water Quality
- ☐ Water Supply/Groundwater
- ☐ Wetland/Riparian
- ☐ Growth Inducement
- ☐ Land Use
- ☐ Cumulative Effects
- ☐ Other

Present Land Use/Zoning/General Plan Designation: Conservation, with Aquaculture overlay

Project Description: *(please use a separate page if necessary)*

NOTE: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice or Preparation or previous draft document) please fill in.

Revised 2005

The Proposed Project is continued mariculture operations on 300 acres of tidelands within Humboldt Bay, conducted with Pacific Longline technology, plus ancillary operations. See attached Initial Study for a complete description of the proposed project.

Reviewing Agencies Checklist *Appendix C continued*

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below.

X	Air Resources Board	___	Office of Emergency Services
___	Boating & Waterways, Department of	___	Office of Historic Preservation
___	California Highway Patrol	___	Parks & Recreation
___	Caltrans District # ___	___	Pesticide Regulation, Department of
___	Caltrans Division of Aeronautics	___	Public Utilities Commission
___	Caltrans Planning	___	Reclamation Board
___	Coachella Valley Mountains Conservancy	X	Regional WQCB # 1
X	Coastal Commission	X	Resources Agency
___	Colorado River Board	___	S.F. Bay Conservation & Development Commission
___	Conservation, Department of	___	San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy
___	Corrections, Department of	___	San Joaquin River Conservancy
___	Delta Protection Commission	___	Santa Monica Mountains Conservancy
___	Education, Department of	X	State Lands Commission
___	Office of Public School Construction	___	SWRCB: Clean Water Grants
X	Energy Commission	___	SWRCB: Water Quality
___	Fish & Game Region # Marine	___	SWRCB: Water Rights
___	Food & Agriculture, Department of	___	Tahoe Regional Planning Agency
___	Forestry & Fire Protection	___	Toxic Substances Control, Department of
___	General Services, Department of	___	Water Resources, Department of
___	Health Services, Department of		
___	Housing & Community Development		
___	Integrated Waste Management Board	___	Other: ___
___	Native American Heritage Commission	___	Other: ___

Local Public Review Period (to be filled in by lead agency)

Starting Date February 5, 2007 Ending Date March 6th, 2007 (4:00 PM)

Lead Agency (Complete if applicable):

Consulting Firm: ___

Address: ___

City/State/Zip: ___

Contact: ___

Phone: ( ) ___

Applicant: Coast Seafoods

Address: 25 Waterfront Drive

City/State/Zip: Eureka, CA 95501

Phone:(707) 442-2947

Signature of Lead Agency Representative ___ Date: ___

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

DRAFT
MITIGATED NEGATIVE DECLARATION

The Humboldt Bay Harbor, Recreation and Conservation District (District) has reviewed the proposed project described below to determine whether it could have a significant effect on the environment. "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

The District prepared an Initial Study for the proposed project, attached and incorporated as a part of this Draft Mitigated Negative Declaration. Based upon the content of the attached Initial Study, the District intends to adopt a Mitigated Negative Declaration (MND) pursuant to the requirements of the California Environmental Quality Act (CEQA). Based upon this MND, the District proposes to find that the proposed project will not cause significant environmental impacts when implemented together with the mitigation measures identified in this document.

Name of Project: Coast Seafoods Application for Continued Mariculture Operations in Humboldt Bay, California

Lead Agency Name and Address: Humboldt Bay Harbor, Recreation and Conservation District
P.O. Box 1030
Eureka, CA 95502-1030

Contact Person and Phone Number: David Hull, Chief Executive Officer
(707) 443-0801

State Clearinghouse Number: 99062069 (Prior SCH No. for this project)

Project Description: Coast Seafoods Company (Coast) has applied to the Humboldt Bay Harbor, Recreation and Conservation District (District) for a permit to continue off-bottom shellfish culture operations in Humboldt Bay.

Coast's mariculture operations are located in Humboldt Bay, California. Humboldt Bay encompasses roughly 62.4 square kilometers (about 15,400 acres) at mean high tide in three geographic segments: South Bay, Entrance Bay and Arcata Bay. Coast owns 560.9 acres and leases another 3,384.5 acres, for a total of 3,945.4 acres, all in Arcata Bay (North Bay).

Coast Seafoods Company has been culturing shellfish in Humboldt Bay California since the early 1950s. Coast's predecessors in interest cultured shellfish in Humboldt Bay since the early 1900s. Historically, Coast cultured as much as 1000 acres of tidelands for oyster culture. Coast traditionally cultured shellfish using bottom culture methods, which entailed growing oysters

directly on the bay bottom and harvesting them with an oyster dredge. In the mid to late 1990s, at the urging of various regulatory agencies, Coast began to transition its operations to off-bottom culture, primarily long line culture, largely as a response to requests from regulatory and trustee agencies to adopt a culturing process that had fewer adverse environmental effects than bottom-culture.

On December 2, 1999, the District adopted a Mitigated Negative Declaration (MND; SCH No. 99062069) for Coast's operations, following a consideration of the potential environmental effects of the proposed activities. The District's consideration of Coast's proposal was a *de novo* review of Coast's activities, following a change in California regulations that newly assigned regulatory responsibilities for mariculture operations to local agencies. The proposed activity in the application considered by the District included oyster culture operations on approximately 500 acres of Humboldt Bay's bottom, including bottom culturing methods (harvesting oysters with hydraulic dredge and a modified dragline-type dredge) and off-bottom culturing methods using long-line devices (primarily PVC pipe-stakes and rope) and rack-and-bag apparatus.

The District established a Mariculture Monitoring Committee (MMC) as an element of the project's approval. The MMC has been active during the duration of the District's ongoing management of this project, and the implementation of the mitigation measures adopted as part of the previous MND benefited from guidance by the MMC.

Under this application, Coast will continue its off-bottom culture on 255 acres and complete the conversion of 45 acres from bottom culture to off-bottom culture for a total operational footprint of 300 acres of its owned and leased lands (see Figure 1 for proposed bed locations). Off-bottom culture includes both long-line and rack and bag culture methods as described in the Initial Study and in the Initial Study Attachment A (Bed Status Table). Initial Study Attachment B depicts the location of current beds. As part of this proposal Coast will also continue to utilize its "nursery" area, operate its floating upwelling system (FLUPSY), utilize its wet storage floats and clam rafts. Initial Study Attachment C provides a graphic depiction of long-line culture, rack and bag culture, FLUPSY, wet storage floats, and clam rafts. A breakdown of the 300 acres that will be used at any one time is as follows:

- 238.08 acres of the total are currently and will continue to be planted with long line culture of Pacific (*Crassostrea gigas*) and Kumamoto (*Crassostrea sikamea*) oysters identified as "Replanted PLL." Portions of this area (approximately 56 acres) have been used for bottom culture for 30+ years. The remaining 182 acres were converted from bottom culture starting in 1997 and are currently entirely used for off-bottom culture. The long lines are spaced at 2.5 feet and would remain at this spacing for future plantings.
- 45.49 acres of recently harvested and cleaned-off bottom culture beds will be replanted to long-line culture (see below).
- 11.23 acres of the total are currently and will continue to be utilized for rack and bag culture of primarily Kumamoto oysters identified as "Rack and Bag" on the bed status table. This area has been converted to off-bottom culture since 1997. Prior to that time, the area was used for bottom culture and shell deposition.
- 4.81 acres of the total are currently and will continue to be utilized as a nursery area identified as "Nursery" on the bed status table. This area has been used as a nursery since the 1950's.
- 0.04 acre of the total is currently and will continue to be utilized by a floating upwelling system

(FLUPSY) identified as "FLUPSY" on the bed status table.

- 0.04 acre of the total is currently and will continue to be utilized for wet storage floats identified as "Wet Storage Floats" on the bed status table. This area has been in its current use since the 1950's.
- 0.31 acre of the total is currently and will continue to be utilized for clam rafts identified as "Clam Rafts" on the bed status table. The clam rafts located in this area were installed under a Letter of Permission from the Corps in August of 1997 (File 22036N) and a Coastal Development Permit from the California coastal Commission in June of 1997 (#1-96-69) and amended April of 2002 (#E-02-005-A1).

In December 2006 Coast met with the District's Mariculture Monitoring Committee (MMC) to discuss the locations of beds for the remaining 45.49 acres of long-line plantings within the total 300-acre operational footprint. The MMC concurred with the replanting of the beds identified in Table 1. These beds are included in the total area identified in Attachments A and B in the Initial Study.

Table 1. Remaining Long-line Plantings

Bed Name	Planting Priority	Bed Status	Acres to Plant
MR 2	1	Cleaned off; ready for replant. Proposed PLL.	6.78
EB 7-2	2	Cleaned off; ready for replant. Proposed PLL.	11.5
MR 11	3	Cleaned off; ready for replant. Proposed PLL.	4.42
MR 9	4	Cleaned off; ready for replant. Proposed PLL.	7.02
MR 10	5	Cleaned off; ready for replant. Proposed PLL.	7.88
MR 5-2	6	Cleaned off; ready for replant. Proposed PLL.	3.7
MR 8-2	7	Cleaned off; ready for replant. Proposed PLL.	3.7
		Total	~45.5

The current application from Coast includes a substantial number of project elements or modifications to the proposed mariculture operations that were not part of the 1997 application before the District, and the effects of these project elements and modifications were not considered in the CEQA process in 1998. Many of the modifications are based, in part, on the results of the applied research called for in the prior MND. Other modifications in the project have arisen out of various regulatory and permitting processes other than the District's. The incorporation of these elements into the project is intended by Coast, and is herein identified by the District, as a proposal to avoid and reduce potential environmental impacts that may result from the proposed mariculture operations, such that environmental effects that might occur will be avoided, reduced, or offset as a result of incorporating these mitigation measures.

Significant changes in the physical scope of Coast's maricultural operations, which were not specifically identified as mitigation measures in the 1999 MND, will include:

- Coast will reduce the operational footprint of maricultural operations from 500 acres to 300 acres.
- Coast will convert all remaining bottom culture to off-bottom culture. Coast has already terminated all bottom culture operations, and will not initiate any new bottom culture in Humboldt Bay. All previously existing bottom culture beds will lie fallow unless such beds

are included within the 300-acre operational footprint discussed above to be used for off-bottom culture.

- Coast will not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester.
- Coast has removed all bat ray fencing on any of its owned or leased tidelands and will not construct any new bat ray fencing.

In addition, Coast will incorporate the following operational conditions into its Humboldt Bay mariculture operations:

- Coast will submit to the District by December 1 of each year an annual report describing the status of each bed within the 300-acre operational footprint discussed above.
- To the extent feasible, Coast will avoid long-line harvester vessel contact with the bay bottom. To avoid potential impacts to eelgrass from shading, Coast will not anchor the long-line harvester in such a way as to shade the same area of eelgrass for a period exceeding twelve (12) hours.
- Coast will instruct its field personnel regarding operating procedures such that take or harassment (as defined by the Marine Mammal Protection Act) of any marine mammal will be avoided.
- All oyster culture activities, for the bed identified in Attachment A as "Sand Island NK" will remain at least 100 meters away from the MHHW line of Sand Island, in order to avoid impacts to Caspian tern nesting.
- Coast will not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into the bay's waters.
- Coast will not intentionally deposit shells or any other material on the bay bottom. Inadvertent deposition of shells and other biological materials on the bay bottom as a consequence of culturing activities will be minimized to the maximum extent feasible.
- During the months of December, January, and February, Coast will visually survey the beds to be worked on each day prior to harvesting and/or planting, to determine whether herring have spawned on eelgrass, culture materials, or substrate. If herring spawning is observed, Coast will (a) postpone for two weeks harvesting and planting activities on those beds where spawning has occurred, and (b) notify the California Department of Fish and Game's Eureka Marine Region office within 24 hours of the observation of herring spawning.

Coast will undertake the following actions with regard to studies and surveys in Humboldt Bay:

- As required in the 1999 MND, Coast has submitted to the District large-scale maps of Coast's 300-acre operational footprint discussed above, including identification of the locations of long-line culture, rack and bag culture, seed nurseries and floating oyster seed nursery ("FLUPSY"). The maps are in hard copy and electronic format (a CD-ROM disk containing digital GIS layers). The full boundaries of all culture beds and nurseries located within the 300-acre operational footprint have been mapped with a GPS unit with a differential correction and an expected horizontal positional error of 3m or less. The GIS data will be geo-referenced and differentially corrected in post-processing, and Coast will submit evidence proving the accuracy of these data, including comparisons with GPS

benchmarks, a description of survey instrument and methods, and the instrument's nominal accuracy. These maps will be updated each time Coast makes a material change in any of the areas within its 300-acre operational footprint.

- As required by the 1999 MND, Coast provided both financial support and in-kind material assistance to the investigators conducting studies supported by the Western Regional Aquaculture Center (WRAC), which have been completed, and results have been presented to the District.
- Coast supported the completion of the Humboldt Bay salmonid study conducted by the U.S. Fish and Wildlife Service, and results have been presented to the District.
- Coast will provide in-kind support to the National Marine Fisheries Service as it conducts additional studies of the interactions among oyster culture and eelgrass.

Coast proposes to protect other tidelands in Arcata Bay from impacts that might result from mariculture operations by undertaking the following additional actions with regard to its owned and leased tidelands in Humboldt Bay:

- Coast will maintain in place its leases with the District, the City of Eureka, and the Karamu Corporation (approximately 3,645 acres). Copies of these leases are available upon request. Coast will exercise its renewal options, and satisfy its payments and other obligations, in each of the aforementioned leases to ensure that all three leases remain in effect until at least the year 2015. Aside from the 300-acre operational footprint established pursuant to the permit, Coast will not conduct oyster harvesting activities on any of its leased lands. This cessation of activity is intended to offset any perceived environmental impacts of Coast's operations on that 300-acre operational footprint.
- Coast will transfer title to fifty (50) acres of the tidelands it owns in Humboldt Bay to the District, or to an environmental conservation organization, subject to the consent of State and local regulatory agencies, to ensure said transferred tidelands are permanently protected from any development. Coast shall work with the California Department of Fish and Game and the District to select an appropriate 50 acres for said transfer.

Project Location and Assessor's Parcel Numbers: The project is located on Coast Seafoods owned and leased lands within Humboldt Bay, California (see Figure 1).

Project Assessor's Parcel Numbers:

Coast Seafoods Company 25 Waterfront Drive Eureka, CA 95501	506 121 06, North Bay tidelands 400 221 02, North Bay tidelands 400 201 01, North Bay tidelands 101 11 09, Processing plant at 25 Waterfront Drive
Karamu Corp 29850 Sherwood Rd. Fort Bragg, CA 95437	400 201 02, North Bay leased tidelands
City of Eureka	405 071 03, North Bay leased tidelands

531 K Street
Eureka, CA 95501

HBHRCD
P.O. Box 1030
Eureka, CA 95501

Tidelands lease (APN n/a)

Mailing Address and Phone Number of Applicant Contact Person:
Greg Dale
SW Operations Manager
Coast Seafoods Company
25 Waterfront Drive
Eureka, CA 95501
707-442-2947

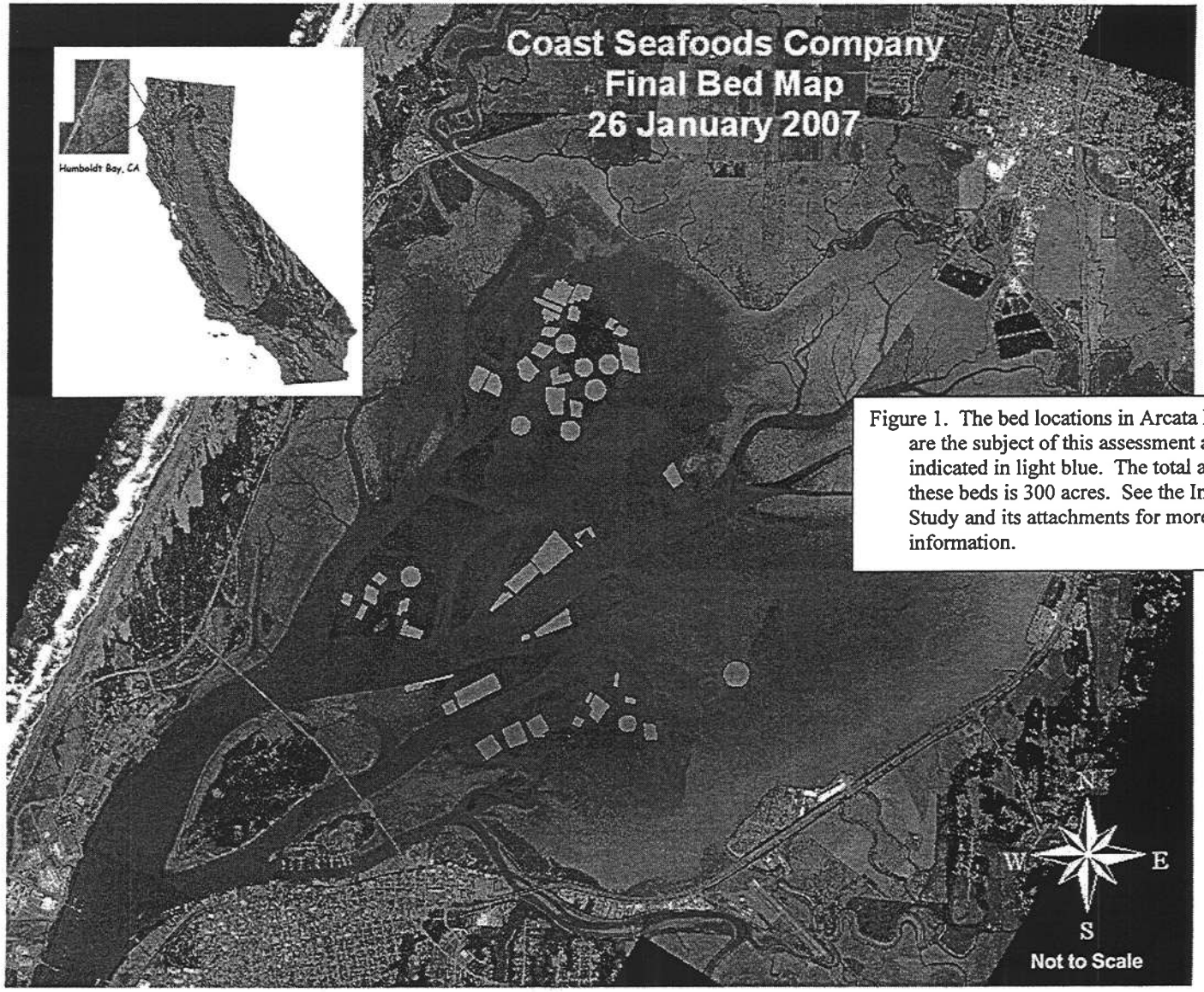

Figure 1. The bed locations in Arcata Bay that are the subject of this assessment are indicated in light blue. The total area of these beds is 300 acres. See the Initial Study and its attachments for more detailed information.

Findings

The Humboldt Bay Harbor, Recreation, and Conservation District finds the project described above will not have a significant effect on the environment because mitigation measures identified in the attached Initial Study will reduce potentially significant effects on the environment to levels that are less-than-significant. The project applicant has made or adopted, or agrees to make or adopt during project implementation, project revisions and practices that clearly reduce all potentially significant effects to a less-than-significant level.

The Humboldt Bay Harbor, Recreation, and Conservation District further finds that there is no substantial evidence in the record that this project, as mitigated, may have a significant effect on the environment.

Potential Impacts and Mitigation Measures

The District identified potentially significant environmental impacts that could result from the proposed project. The District also identified mitigation measures that reduce the potential impacts to less-than-significant levels. All mitigation measures shall be included as conditions of approval in any permits issued by the District to the applicant, where they shall be identified as mitigation measures adopted pursuant to the District's CEQA evaluation for this project.

The impacts and mitigation measures are stated in the following subsections.

Air Quality

Potential Effect III-1: Contribution to Air Quality Nonattainment Status

Engines on vessels used in the applicant's mariculture operations in Humboldt Bay will release particulates. Because the North Coast Air Basin is "nonattainment" pursuant to state regulations, the release of these particulates would contribute to an environmental impact that is cumulatively significant by definition.

Mitigation Measure III-1 (Air Quality)

The applicant shall consult with the North Coast Unified Air Quality Management District with respect to the requirements of adopted AQMD regulatory plans. The applicant shall comply with the requirements of all adopted air quality plans at all time, including plans covering particulate emissions, and shall implement all actions required by the AQMD for the applicant's mariculture operations.

Biological Resources

Potential Effect IV-1: The Proposed Project May Adversely Affect Listed Salmonid Species or their Habitat

The proposed project is located within areas that are known to be used by adults and juveniles of three salmonid ESUs listed pursuant to federal and state Endangered Species

Acts, and the proposed project could adversely affect one or more of these species or their habitats

Potential Effect IV-2: Potential Reduction in Eelgrass Coverage and Density

The proposed mariculture project could result in reduced density or areal coverage in eelgrass, an environmentally sensitive habitat type for Humboldt Bay.

Mitigation Measure IV-1/IV-2 (Biological Resources). The applicant shall implement all of the following elements in order to assure that the proposed project's effects on biological resources are reduced to less-than-significant levels.

The District has identified a number of measures that will reduce the impact of the proposed project on biological resources in the Humboldt Bay ecosystem, and the applicant has agreed to implement those measures. The measures include:

- *The operational footprint will be reduced from 500 acres to 300 acres.*
- *The applicant will not initiate any new bottom culture in Humboldt Bay. All previously existing bottom culture beds shall lie fallow unless such beds are included within the 300-acre operational footprint discussed above to be used for long line off-bottom culture.*
- *The applicant will not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester within Humboldt Bay.*
- *The applicant will not construct or use bat ray fencing within Humboldt Bay.*
- *The applicant will submit to the District by December 1 of each year an annual report describing the status of each bed within its 300-acre operational footprint.*
- *Where feasible, the applicant will avoid long line harvester vessel contact with the bay bottom. To avoid potential impacts to eelgrass from shading, the applicant will not anchor long line harvesters in such a way as to shade the same area of eelgrass for a period exceeding twelve (12) hours.*
- *No take or harassment (as defined by the Marine Mammal Protection Act) of any marine mammal will be allowed.*
- *All oyster culture activities, for the bed identified in Attachment A as "Sand Island NK" will remain at least 100 meters away from the MHHW line of Sand Island.*
- *The applicant will not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into marine waters.*
- *The applicant will not intentionally deposit shells or any other material on the sea floor. Natural deposition of shells and other materials will be minimized to the maximum extent feasible.*

- *During the months of December, January, and February, the applicant will visually survey those beds to be worked on each day prior to harvesting and/or planting, to determine whether herring has spawned on eelgrass, culture materials, or substrate. If herring spawning is observed, the applicant will (a) postpone for two weeks harvesting and planting activities on those beds where spawning has occurred, and (b) notify the California Department of Fish and Game's Eureka Marine Region office within 24 hours of observation of herring spawning.*

- *The applicant will provide in-kind support to the National Marine Fisheries Service as it conducts additional studies of the interactions among oyster culture and eelgrass.*

- *The applicant will maintain in place its leases with the District, the City of Eureka, and the Karamu Corporation (approximately 3,645 acres). Copies of these leases are available upon request. The applicant will exercise its renewal options, and satisfy its payments and other obligations, in each of the aforementioned leases to ensure that all three leases remain in effect until at least the year 2015. Aside from the 300-acre operational footprint established pursuant to the permit, Coast will not conduct oyster harvesting activities on any of its leased lands. This cessation of activity is intended to offset any perceived environmental impacts of Coast's operations on that 300-acre operational footprint.*

- *The applicant will transfer fifty (50) acres of the tidelands it owns in Humboldt Bay to the District or an environmental conservation organization subject to the consent of State and local regulatory agencies, to ensure said transferred tidelands are permanently protected from any development. The applicant shall consult with the California Department of Fish and Game and the District to select an appropriate 50 acres for said transfer.*

Hazards and Hazardous Materials

Potential Effect VII-1: Releases of Fuels, Lubricants, and other Toxic Materials Resulting from Mariculture Activities

The proposed mariculture operations in Arcata Bay include elements that may be associated with the release of fuels, lubricants, and other hazardous materials into the bay's waters as a possible consequence of accidents or other unplanned events.

Mitigation Measure VII-1 (Hazardous Materials)

The applicant shall develop and implement an equipment maintenance program for all vessels that are use in its mariculture activities, and shall consider the likelihood of release of fuels, lubricants, paints, solvents, or other potentially toxic materials that may be associated with these vessels as a result of accident, upset, or other unplanned events. The applicant shall prepare an annual summary statement that identifies the maintenance status of each vessel, and shall present this statement to the District for review; the applicant shall address any vessel maintenance concerns identified by the District.

Hydrology and Water Quality

Potential Effect VIII-1: Water Quality Impacts Resulting from Mariculture Activities

The proposed mariculture operations in Arcata Bay include elements that may be associated with significant effects on water quality because of: (a) the release of hazardous materials, including fuels and lubricants (an effect addressed in Section VII); and (b) sediment, which is associated both with a number of pollutants and with direct and indirect impacts on aquatic species and communities.

Mitigation Measure VIII-1 (Water Quality)

The applicant shall adopt all of the following practices as elements in its mariculture operations:

- *The applicant shall develop and implement an equipment maintenance program for all vessels that are use in its mariculture activities, as described in Section VII.*
- *The applicant shall not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester.*
- *To the extent feasible, the applicant shall avoid long-line harvester vessel contact with the bay bottom. The applicant shall similarly minimize the extent or degree of sediment mobilization associated with all of its other mariculture activities in the bay.*
- *The applicant shall not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into the bay's waters.*

Public Review Period

The District will accept written comments regarding this Draft Mitigated Negative Declaration during a 30-day review period ending on the date identified in the "Notice of Intent"/Notice of Completion form that accompanies this document. Comments should be submitted to:

David Hull
Executive Officer
Humboldt Bay Harbor, Recreation and Conservation District
P.O. Box 1030
Eureka, CA 95502-1030

Copies of documents or other information pertinent to this environmental review may be obtained from the District; there may be document-production costs associated with the documents.

Signed: _____

Name: David Hull

Title: Executive Officer, HBHRCD

Adopted on: _____ _____

Initial Study

Project: **Continued Humboldt Bay Oyster Culture**

Applicant:

Coast Seafoods Company
25 Waterfront Drive
Eureka, CA 95501

Lead Agency:

Humboldt Bay Harbor, Recreation and Conservation District
P.O. Box 1030
Eureka, CA 95502-1030
707-443.0801

January 2007

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Table of Contents

Chapter 1
Introduction

Purpose of this Document

This initial study (IS) is a public document that assesses the environmental effects of the proposed Coast Seafoods continued mariculture operations in Humboldt Bay (the project), as required by the California Environmental Quality Act (CEQA) and in compliance with the State CEQA Guidelines (14 Cal. Adm. Code 1400 et seq.). It serves as an informational document to be used in the local planning and decision-making process, and does not recommend approval or denial of the project.

The Humboldt Bay Harbor, Recreation, and Conservation District (the District), the state lead agency under CEQA, must evaluate the environmental impacts of the project when considering whether to approve the project. The District has prepared this IS for the project documenting that all impacts resulting from the project that are considered less-than-significant.

Scope of this Document

This document evaluates the project's potential impacts on the following environmental subject areas:

- *aesthetics,*
- *agricultural resources,*
- *air quality,*
- *biological resources,*
- *cultural resources,*
- *geology and soils,*
- *hazards and hazardous materials,*
- *hydrology and water quality,*
- *land use planning,*

- *mineral resources,*
- *noise,*
- *population and housing,*
- *public services,*
- *recreation,*
- *transportation/traffic*
- *utilities and service systems, and*
- *mandatory findings of significance.*

Impact Terminology

The following terminology is used in this document to describe the levels of significance of impacts that would result from the project:

- *The project is considered to have no impact if the analysis concludes that the project would not affect a particular resource topic.*
- *An impact is considered less than significant if the analysis concludes that the project would cause no substantial adverse change to the environment and that impacts would not require mitigation.*
- *An impact is considered less than significant with mitigation incorporated if the analysis concludes that the proposed project would cause no substantial adverse change to the environment with the inclusion of mitigation measures to which the applicant has agreed.*
- *An impact is considered* environmentally significant *if the analysis concludes that the proposed project would cause substantial adverse change to the environment that could not be reduced to less-than-significant levels by the inclusion of identified mitigation measures.*

Organization of this Document

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- *Chapter 1, "Introduction," identifies the purpose, scope, and terminology of the document.*
- *Chapter 2, "Project Description," identifies the location, background, and planning objectives of the project; describes the project in detail; identifies the permits and approvals required for the project; and identifies public involvement procedures.*

- *Chapter 3, "Environmental Checklist," presents the checklist responses for each resource topic. This section includes a brief setting description for each resource topic and identifies the project's impacts on those resources topics.*

- *Chapter 4, "References Cited," identifies all printed references and personal communications cited in this report.*

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Chapter 2

Project Description

1. **Project Title:**	Coast Seafoods Application for Continued Mariculture Operations in Humboldt Bay, California
2. **Lead Agency Name and Address:**	Humboldt Bay Harbor, Recreation and Conservation District P.O. Box 1030 Eureka, CA 95502-1030
3. **Contact Person and Phone Number:**	David Hull, Chief Executive Officer (707) 443-0801
4. **Project Location:**	Owned and leased tidelands in Arcata Bay, CA
5. **Project Sponsor's Name and Address:**	Coast Seafoods Company 25 Waterfront Drive Eureka, CA 95501
6. **General Plan Designation:**	"Conservation Water" (1975 Humboldt Bay Master Plan); "Bay Conservation" with "Mariculture" combining (2006 Humboldt Bay Management Plan)
7. **Zoning:**	N/A

8. **Background:** Coast Seafoods Company (Coast) has been culturing shellfish in Humboldt Bay California since the early 1950s. Coast's predecessors in interest cultured shellfish in Humboldt Bay since the early 1900s. Historically, Coast cultured as much as 1000 acres of tidelands for oyster culture. Coast traditionally cultured shellfish using bottom culture methods, which entailed growing oysters directly on the bay bottom and harvesting them with an oyster dredge. In the mid to late 1990s, at the urging of various regulatory agencies, Coast began to transition its operations to off-bottom culture, primarily long line culture, largely as a response to requests from regulatory and

trustee agencies to adopt a culturing process that had fewer adverse environmental effects than bottom-culture.

On December 2, 1999, the District adopted a Mitigated Negative Declaration (MND; SCH No. 99062069) for Coast's operations, following a consideration of the potential environmental effects of the proposed activities. The District's consideration of Coast's proposal was a *de novo* review of Coast's activities, following a change in California regulations that newly assigned regulatory responsibilities for mariculture operations to local agencies. The proposed activity in the application considered by the District included oyster culture operations on approximately 500 acres of Humboldt Bay's bottom, including bottom culturing methods (harvesting oysters with hydraulic dredge and a modified dragline-type dredge) and off-bottom culturing methods using long-line devices (primarily PVC pipe-stakes and rope) and rack-and-bag apparatus.

As part of the CEQA review process for the proposal, the district completed an Initial Study (IS) assessing the environmental effects of Coast's proposed action. The IS concluded that there would be "No Impact" or a "Less than Significant Impact" for the following environmental factors: Population and Housing, Geological Problems, Air Quality, Transportation/Circulation, Energy and Mineral Resources, Hazards, Noise, Public Services, Utility and Services Systems, Aesthetics, Cultural Resources, and Recreation.

The IS also concluded that the project could have "Less than Significant with Mitigation Incorporated" impacts on the following environmental factors: Land Use and Planning, Water, Biological Resources, and Mandatory findings of Significance. The MND described several mitigation measures to be implemented to reduce the identified impacts to a less-than-significant level. Several of the potentially significant impacts were identified as such because of uncertainty with respect to the relationships between Coast's mariculture activities and conditions in Humboldt Bay. Therefore, many of the mitigation measures incorporated interim practices that were applied to Coast's operations as conditions of approval, as well as applied research projects aimed at clarifying the interactions of Coast's activities with the environmental factors. Where a clear relationship existed between culturing activities and the potential impacts, mitigation measures specifically addressed practices to be modified to avoid or reduce the potential impacts. The District concluded that the identified mitigation measures reduced all potential impacts from Coast's operations to less-than-significant levels, given the uncertainty about the culturing practices and the bay's ecology.

Coast's operations were approved by the District under permit number 1998-3. The permit incorporated an initial one-year operating approval, with provisions for review by the District at that time and possible additional one-year renewals of the approval while the research called for in the permit was carried out, for a total period of five years. The permit specified that the District would again consider Coast's proposal at the end of the initial five-year period, as well as the results of the applied research and any other relevant information that became available, together with potential operating conditions that might be appropriate.

This 2007 Initial Study carries forward the previous CEQA analysis and evaluates potential impacts associated with Coast's proposed operations, as called for in the MND adopted by the District in 1999. The District, in approving permit 1998-3 and adopting the MND, did not close the CEQA review process for the original application, and the current review process was specifically identified as the anticipated culmination of the environmental review for Coast's mariculture activities. The District explicitly identified in the MND an intention to use this tiered review to identify possible environmental effects and environmental benefits that the District would incorporate as conditions of approval in authorizing longer-term permits for Coast's mariculture operations. It is therefore important to note, in the context of this assessment, that the "environmental baseline" for impact assessments in this continued CEQA document is the baseline that existed when Coast applied to the

District in 1998.

The current application from Coast includes a substantial number of project elements or modifications to the proposed mariculture operations that were not part of the 1997 application before the District, and the effects of these project elements and modifications were not considered in the CEQA process in 1998. Many of the modifications are based, in part, on the results of the applied research called for in the prior MND. Other modifications in the project have arisen out of various regulatory and permitting processes other than the District's. The incorporation of these elements into the project is intended by Coast, and is herein identified by the District, as a proposal to avoid and reduce potential environmental impacts that may result from the proposed mariculture operations, such that environmental effects that might occur will be avoided, reduced, or offset as a result of incorporating these mitigation measures.

Significant changes in the physical scope of Coast's maricultural operations, which were not specifically identified as mitigation measures in the 1999 MND, will include:

- *Coast will reduce the operational footprint of maricultural operations from 500 acres to 300 acres.*

- *Coast will convert all remaining bottom culture to off-bottom culture. Coast has already terminated all bottom culture operations, and will not initiate any new bottom culture in Humboldt Bay. All previously existing bottom culture beds will lie fallow unless such beds are included within the 300-acre operational footprint discussed above to be used for off-bottom culture.*

- *Coast will not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester.*

- *Coast has removed all bat ray fencing on any of its owned or leased tidelands and will not construct any new bat ray fencing.*

In addition, Coast will incorporate the following operational conditions into its Humboldt Bay mariculture operations:

- *Coast will submit to the District by December 1 of each year an annual report describing the status of each bed within the 300-acre operational footprint discussed above.*

- *To the extent feasible, Coast will avoid long-line harvester vessel contact with the bay bottom. To avoid potential impacts to eelgrass from shading, Coast will not anchor the long-line harvester in such a way as to shade the same area of eelgrass for a period exceeding twelve (12) hours.*

- *Coast will instruct its field personnel regarding operating procedures such that take or harassment (as defined by the Marine Mammal Protection Act) of any marine mammal will be avoided.*

- *All oyster culture activities, for the bed identified in Attachment A as "Sand Island NK" will remain at least 100 meters away from the MHHW line of Sand Island, in order to avoid impacts to Caspian tern nesting.*

- *Coast will not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into*

the bay's waters.

- *Coast will not intentionally deposit shells or any other material on the bay bottom. Inadvertent deposition of shells and other biological materials on the bay bottom as a consequence of culturing activities will be minimized to the maximum extent feasible.*

- *During the months of December, January, and February, Coast will visually survey the beds to be worked on each day prior to harvesting and/or planting, to determine whether herring have spawned on eelgrass, culture materials, or substrate. If herring spawning is observed, Coast will (a) postpone for two weeks harvesting and planting activities on those beds where spawning has occurred, and (b) notify the California Department of Fish and Game's Eureka Marine Region office within 24 hours of the observation of herring spawning.*

Coast will undertake the following actions with regard to studies and surveys in Humboldt Bay:

- *As required in the 1999 MND, Coast has submitted to the District large-scale maps of Coast's 300-acre operational footprint discussed above, including identification of the locations of long-line culture, rack and bag culture, seed nurseries and floating oyster seed nursery ("FLUPSY"). The maps are in hard copy and electronic format (a CD-ROM disk containing digital GIS layers). The full boundaries of all culture beds and nurseries located within the 300-acre operational footprint have been mapped with a GPS unit with a differential correction and an expected horizontal positional error of 3m or less. The GIS data will be geo-referenced and differentially corrected in post-processing, and Coast will submit evidence proving the accuracy of these data, including comparisons with GPS benchmarks, a description of survey instrument and methods, and the instrument's nominal accuracy. These maps will be updated each time Coast makes a material change in any of the areas within its 300-acre operational footprint.*

- *As required by the 1999 MND, Coast provided both financial support and in-kind material assistance to the investigators conducting studies supported by the Western Regional Aquaculture Center (WRAC), which have been completed, and results have been presented to the District.*

- *Coast supported the completion of the Humboldt Bay salmonid study conducted by the U.S. Fish and Wildlife Service, and results have been presented to the District.*

- *Coast will provide in-kind support to the National Marine Fisheries Service as it conducts additional studies of the interactions among oyster culture and eelgrass.*

Coast proposes to protect other tidelands in Arcata Bay from impacts that might result from mariculture operations by undertaking the following additional actions with regard to its owned and leased tidelands in Humboldt Bay:

- *Coast will maintain in place its leases with the District, the City of Eureka, and the Karamu Corporation (approximately 3,645 acres). Copies of these leases are available upon request. Coast will exercise its renewal options, and satisfy its payments and other obligations, in each of the aforementioned leases to ensure that all three leases remain in effect until at least the year 2015. Aside from the 300-acre operational footprint established pursuant to the permit, Coast will not conduct oyster harvesting activities on any of its leased lands. This cessation of activity is intended to offset any perceived environmental impacts of Coast's operations on that 300-acre operational footprint.*

- *Coast will transfer title to fifty (50) acres of the tidelands it owns in Humboldt Bay to the District, or to an environmental conservation organization, subject to the consent of State and local regulatory agencies, to ensure said transferred tidelands are permanently protected from any development. Coast shall work with the California Department of Fish and Game and the District to select an appropriate 50 acres for said transfer.*

9. **Description of Project:** Coast is applying to the District for a permit to practice off-bottom shellfish culture operations in Humboldt Bay. Humboldt Bay encompasses roughly 62.4 square kilometers (about 15,400 acres) at mean high tide in three geographic segments: South Bay, Entrance Bay, and Arcata Bay. Coast owns 560.9 acres and leases another 3,384.5 acres, for a total of 3,945.4 acres, all in Arcata Bay (North Bay).

   Under this application, Coast will continue its off-bottom culture on 255 acres and complete the conversion of 45 acres from bottom culture to off-bottom culture for a total operational footprint of 300 acres of its owned and leased lands. Off-bottom culture includes both long-line and rack and bag culture methods as described below and in Attachment A (Bed Status Table). Attachment B depicts the location of current beds. As part of this proposal Coast will also continue to utilize its "nursery" area, operate its floating upwelling system (FLUPSY), utilize its wet storage floats and clam rafts. Attachment C provides a graphic depiction of long-line culture, rack and bag culture, FLUPSY, wet storage floats, and clam rafts. A breakdown of the 300 acres that will be used at any one time is as follows:

   - *238.08 acres of the total are currently and will continue to be planted with long-line culture of Pacific (*Crassostrea gigas*) and Kumamoto (*Crassostrea sikamea*) oysters identified as "Replanted PLL" (see Attachment A). Portions of this area (approximately 56 acres) have been used for bottom culture for 30+ years. The remaining 182 acres were converted from bottom culture starting in 1997 and are currently entirely used for off-bottom culture. The long-lines are spaced at 2.5 feet and would remain at this spacing for future plantings.*

   - *45.49 acres of recently harvested and cleaned-off bottom culture beds will be replanted to long-line culture (see below).*

   - *11.23 acres of the total are currently and will continue to be utilized for rack and bag culture of primarily Kumamoto oysters identified as "Rack and Bag" on the bed status table. This area has been converted to off-bottom culture since 1997. Prior to that time, the area was used for bottom culture and shell deposition.*

   - *4.81 acres of the total are currently and will continue to be utilized as a nursery area identified as "Nursery" on the bed status table. This area has been used as a nursery since the 1950s.*

   - *0.04 acre of the total is currently and will continue to be utilized by a floating upwelling system (FLUPSY) identified as "FLUPSY" on the bed status table.*

   - *0.04 acre of the total is currently and will continue to be utilized for wet storage floats identified as "Wet Storage Floats" on the bed status table. This area has been in its current use since the 1950s.*

   - *0.31 acre of the total is currently and will continue to be utilized for clam rafts identified as "Clam Rafts" on the bed status table. The clam rafts located in this area were installed under a*

Letter of Permission from the Corps in August of 1997 (File 22036N) and a Coastal Development Permit from the California coastal Commission in June of 1997 (#1-96-69) and amended April of 2002 (#E-02-005-A1).

In December 2006 Coast met with the District's Mariculture Monitoring Committee (MMC) to discuss the locations of beds for the remaining 45.49 acres of long-line plantings within the total 300-acre operational footprint. The MMC concurred with the replanting of the beds identified in Table 1. These beds are included in the total area identified in Attachments A and B.

Table 1. Remaining Long-line Plantings

Bed Name	Planting Priority	Bed Status	Acres to Plant
MR 2	1	Cleaned off; ready for replant. Proposed PLL.	6.78
EB 7-2	2	Cleaned off; ready for replant. Proposed PLL.	11.5
MR 11	3	Cleaned off; ready for replant. Proposed PLL.	4.42
MR 9	4	Cleaned off; ready for replant. Proposed PLL.	7.02
MR 10	5	Cleaned off; ready for replant. Proposed PLL.	7.88
MR 5-2	6	Cleaned off; ready for replant. Proposed PLL.	3.7
MR 8-2	7	Cleaned off; ready for replant. Proposed PLL.	3.7
		Total	~45.5

In addition, Coast proposes to comply with the operational conditions identified earlier in this document.

Overview of Operations

The process of oyster growing starts at Coast's Quilcene, Washington oyster hatchery. Oysters first go through the spawning process. Upon fertilization the oyster larvae are mobile for two to three weeks and then settle to the bottom, attaching to a clean surface, with the preferred surface being oyster shells from shucked oysters (oyster shells are opened by hand in a processing plant). The shell is called "cultch". Coast bags cultch with the attached larvae for seed setting purposes. Once the larvae (<0.5 mm in size) settle on the cultch they cement themselves and remain stationary for the balance of their life cycle. At this stage, they are called "spat". Cultch with spat attached is called oyster seed. Seed is trucked from Quilcene, Washington to Coast's Eureka facility. Each year a representative sample of each type of seed is examined by a USDA/APHIS certified veterinarian and the results of this examination are sent to CDFG with an application for import of seed. Once appropriate results are verified, CDFG issues a certification for the import of oyster seed.

Upon arrival of the seed at the Eureka facility, the seed is transported by boat to nursery areas located in Humboldt Bay on mudflats north of Indian Island and along Arcata Channel. At these nursery areas the seed is allowed to grow to a less fragile size and age. This process, called beach hardening, is needed to allow the seed to gain size and strength prior to planting. The seed is allowed to beach harden for 3 to 8 months depending on time of year, growth and condition of the seed.

Proposed Operations

Coast currently employs two types of off-bottom culture: long-lines (Attachment C, Drawing 1) and rack and bag method (Attachment C, Drawing 2). For long-line culture, seed is delivered from the hatchery in Quilcene, Washington to Coast's operations in Humboldt and is placed in the intertidal nursery (Attachment D Photo 1) prior to being attached to lines and planted on the long-line beds. For rack and bag culture, single seed (i.e., seed not on cultch) arrives from the hatchery and is placed in the FLUPSY prior to being moved to the rack and bag areas. Each of these activities are described in detail below. Additionally, Coast operates wet storage floats and clam rafts which are also described below. Further information about historic bottom culture practices are described in the environmental setting section of this application. Coast does not propose any bottom culture activities under this application.

Nursery Activities

Long-line culture utilizes cultch set with spat attached, collectively referred to as seed. Coast transports the seed by truck from Quilcene, Washington, and places the bags of seed in the intertidal nursery on Indian Island. Coast stacks the seed on pallets in order to prevent the bottom of the stack from becoming silted in, which suffocates the seed (Attachment D Photo 2). After a period of time, which varies due to seasonal conditions (usually 2-3 months) the seed is removed from the nursery in small batches daily and is brought to the processing plant. At the plant, individual pieces of cultch are braided into the long-line rope and rebagged. Once the cultch has been braided into the rope and bagged it is put into the bay and placed on either a bed or on the applicant's Arcata Channel nursery to await planting.

Long-Line Oyster Culture

Planting is accomplished by placing the seeded long-line on notched PVC stakes that are arranged in rows on the mudflats. The long-lines are strung through notches on top of the PVC stakes, suspending the oyster seed approximately 1 foot above the bay bottom (Attachment D Photo 3).

Long-line spacing varies from bed to bed but most beds have five long lines spaced 2.5 feet apart, with a ten-foot space between each group of five lines (Attachment D, Photo 4). Some beds have long lines spaced 2.5 feet apart over the entire bed. The proposed project includes the use of long lines at 2.5 foot spacing on all beds with the exception of the multiple spaced beds planted at the request of the MMC or as part of the WRAC study.

A crew of 6 typically plants the long-lines when the tide is low enough to allow the crew to walk on the bed to be planted. On days of sufficiently low tides the planting crew will gather enough bags from the nursery, during the preceding high tide using a skiff and a hook, to plant during the subsequent low tide. An alternate method of getting the long-line bags is to pull the skiff into the nursery by hand when the tide is coming in but the water is only a foot or two deep and manually throw the bags into the skiff. The crew will then take the bags to the bed being planted and place them along the edge of a row of empty long-line pipe. At low tide, the crew will go back out to the bed and cut the long-line out of the bag and pull the line out along side the empty pipe. As they walk back to the next bag they will clip the long-line on the notch of each pipe. They continue this until all bags are planted or the tide forces them off the bed. Due to the infrequency of adequately low tides, the planting crew works every low tide that they can.

There is a monthly inspection of each planted bed. Apart from the inspection, virtually no activity takes place on the bed until harvest. A bed inspection involves one or two people walking on the

bed at low tide to make sure that the lines are in the notches.

Long-line beds are harvested when oysters reach a harvestable size (18 to 36 months) and market conditions are right. Market conditions vary with seasons and other factors controlling consumer demand. Coast currently uses two different methods to harvest long-lines. The first, hand picking, involves placing round 20-bushel tubs on the bed at high tide using an oyster scow. The tubs are then filled at low tide by hand. The picking crew cuts the long-line into manageable single clusters and places them in the picking tub. A floating ball is attached to each tub, and at high tide an oyster scow is used to pull the tub out of the water. The oysters are dumped on the deck of the scow, and the tub is placed back on the bed to be refilled. The oysters are brought to the plant to be either broken into singles to be sold live in shell (Attachment D, Photo 4), or loaded onto a truck for shipment to the applicant's shucking plant in South Bend, Washington.

The second method of harvest, the long-line harvester, involves positioning a scow over the long-line bed at high tide. Individual lines are then pulled onto the floating scow either by hand or by means of a hydraulically operated roller. If the lines are pulled by hand then the lines need to be cut into individual clusters, usually at the plant. If the lines are pulled mechanically they run through a breaker that strips the clusters from the line. Wherever feasible, the long-line harvester does not come in contact with the bay bottom while harvesting long-lines.

Rack and Bag Oyster Culture

Rack and bag culture uses single seed and involves a polyethylene mesh bag that is attached via industrial rubber bands to a rebar rack (Attachment C, Drawing 2). The racks are located in East Bay west of EB 6-1 and in Mad River south of MR 5-1 (Attachment B). Rack and bag oysters are grown for the shellstock market and are more evenly proportioned and attractive to discriminating customers. This is because they are single oysters their entire life which allows them to form deeper cups, and they do not have scars from being broken from a cluster. Rack and bag oysters are generally much smaller than a long-line oysters due to the market demand and the limited space provided in rack and bag culture methods. Coast also uses rack and bag culture to allow oysters damaged in the production process to repair themselves and allow oysters too small for market to increase in size.

For rack and bag culture, single seed is shipped via overnight delivery from Coast's Quilcene, Washington hatchery and placed in Coast's floating upwelling system (FLUPSY; see FLUPSY description below) until it reaches a size large enough (approximately 6mm long) to be placed in bags. The mesh bags have openings of approximately 6mm to allow enough water flow for the seed to survive. As the seed grows in the bag it needs to be graded and thinned. Coast does this with a mechanical grader on the FLUPSY. The seed bags are collected from the racks at low tide and placed in a skiff. The bags are taken to the FLUPSY, opened and dumped in a tub. The seed is run through the grader and is separated by size. The seed is then rebagged in size-appropriate bags and placed back on the racks at low tide. This process occurs 3-4 times per year for a given crop (including the initial stocking of the bag).

It takes one to two years for the seed to grow into oysters of market size in rack and bag culture, at which time the bags of oysters are harvested by hand (lifted from the racks into a skiff) and brought to the processing plant to be graded and packaged for market. All areas used for rack and bag culture were previously used from bottom culture and include the areas were shell deposition historically occurred.

FLUPSY (Floating Upwelling System)

The FLUPSY is located on the west side of the entrance channel south of the Simpson wood chip loading dock in Fairhaven, 200 yards from the shoreline in 20 feet of water (Attachment B). The FLUPSY is tied to the dock at the Eureka Boat yard.

The FLUPSY is constructed of aluminum with poly-encapsulated floats for floatation and has a submerged tough containing a paddle wheel (Attachment C, Drawing 3). This trough is surrounded by 16 open wells containing upwelling bins. The paddle wheel turns and moves the water out of the trough; in order for the trough to fill, the water must pass through the upwelling bins containing oyster seed. The bins are removable for maintenance of the seed.

The seed is about 1.4 mm long when it arrives from the Quilcene hatchery and is nursed to roughly 6 mm before being placed in bags. Activities on the FLUPSY include maintaining the seed by rinsing off bins with water, and grading seed based on size.

Wet Storage Floats

The wet storage floats are located in the "cut across" channel between Bird Island and Mad River (Attachment B). The floats are anchored in approximately 20 feet of water in a series of four 20-foot by 20-foot square wooden frames (Attachment C Drawing 4). Bags of mature oysters recently harvested and ready for distribution to wholesalers are temporarily placed in the floats to maintain the oysters' fresh condition. Bags of oysters are placed and removed by hand and transported using a skiff.

Clam Rafts

The clam rafts are located along the west side of the entrance to Mad River Slough Channel opposite Bird Island, approximately ½ mile north of the Samoa/Hwy 255 bridges (Attachment B). The rafts are attached to concrete anchors in approximately 20 feet of water and are accessed by skiff. There are 10 floating rafts, each 12 feet wide by 20 feet long (Attachment C, Drawing 5). The rafts are constructed from aluminum and use polyethylene encapsulated Styrofoam for floatation. Each raft has 24 tray wells, which contain seed nursery trays in stacks of about 20 suspended in each well. The rafts only contain seed, which is shipped elsewhere (mostly to Willapa Bay, Washington) for grow-out and harvest. The activities at the clam rafts include placing and removing stacks of trays daily, cleaning and routine maintenance. Twice each year anchors and ground tackle are examined and repaired as necessary by divers using scuba, skiffs and an oyster barge.

The sections above provide a general description of oyster culture activities. Minor variations in operations occur during any given portion of aquaculture operations. The analysis in the subsequent sections of this checklist have accounted for this variability.

10. **Surrounding Land Uses and Setting:** Coast's mariculture operations are located on owned and leased intertidal lands of Arcata Bay. Arcata Bay is the northern segment of the larger Humboldt Bay estuary in Northern California. The areas surrounding Coast's operations are dominated by tidal flats, tidal channels and open water. A more detailed description of the surrounding land uses and setting can be found in the Environmental Baseline section of the attached Biological Assessment (Attachment E; pages 26-41). This referenced section is also appropriate for consideration as the Environmental Setting from which to evaluate potential impacts from the

project. Oyster culture has been an ongoing use of the Bay since the early 1900s with Coast's ownership of its mariculture operations beginning in the 1950s. There are several other growers who culture shellfish in the bay as well.

11. Other Public Agencies whose Approval Is Required:

Agency – United States Army Corps of Engineers:

Type - Individual Permit Approval – (Section 404 Clean Water Act, Section 10 Rivers and Harbors Act)

Identification Number – Public Notice Number 26912N

Date Applied – 24 September 2004

Date Approved – 23 January 2006

Agency – North Coast Regional Water Quality Control Board:

Type Approval – Water Quality Certification (Section 401 Clean Water Act)

Identification Number – WIDID No. 1B01140WNDN

Date Applied – 12 December 2001

Date Approved – 25 April 2002

Agency – California Coastal Commission:

Type Approval – Coastal Development Permit and Coastal Zone Management Consistency Determination.

Identification Number – E-06-003

Date Applied – 31 January 2006

Date Approved – 11 May 2006

Chapter 3

Environmental Checklist and Discussions

Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☐ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities/Service Systems	☐ Mandatory Findings of Significance	

Determination:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature	Date
Printed Name	For

Evaluation of Environmental Impacts:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

4. "Negative Declaration: Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less-than-Significant Impact". The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level. (Mitigation measures from Section XVII, "Earlier Analyses", may be cross-referenced.)

5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)]. In this case, a brief discussion should identify the following:
   (a) Earlier Analysis Used. Identify and state where earlier analyses are available for review.
   (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:
   (a) the significance criteria or threshold, if any, used to evaluate each question; and
   (b) the mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a.	Have a substantial adverse effect on a scenic vista?	[ ]	[ ]	[X]	[ ]
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	[ ]	[ ]	[ ]	[X]
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	[ ]	[ ]	[X]	[ ]
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	[ ]	[ ]	[X]	[ ]

Discussion of Checklist Reponses:

Item I.a: Scenic Resources Impacts. Coast's proposed operations are, and will continue to be, visible from the margin of Arcata Bay. Coast's change from bottom culture to off-bottom culture entails placing longline and rack and bag structures onto the intertidal area. In the case of long-lines, these structures consist of 8-inch to 12-inch PVC pipe sections placed into the substrate from which the oyster lines are suspended. The rack and bag structures are wooden racks approximately 3 feet by 12 feet; raised 14 inches above the substrate.

Both long-lines and rack and bag structures have been used historically in Humboldt Bay in various locations. In areas where Coast is transitioning from bottom culture to long-line or rack and bag, Coast has removed bat ray exclusion fences that had a similar aesthetic impact. Therefore the current proposal does not represent a substantial change in visual effect with respect to structures within the bay, and the potential effects on scenic vistas (item I.a) are identified as less-than-significant.

Item I.c: Visual Character. Activities associated with the proposed project will remain visible from both Highway 101 and Highway 255. The distance between the activities and observers in relation to the scale of Arcata Bay will be such that the mariculture activities will appear to be a minor use of the Bay. The reduction of the operational footprint from its maximum of 1,000 acres, more recently to 500 acres and now, under this proposal to 300 acres, would represent a further minimization of any perceived impact on aesthetics. The District concludes that the proposed project's effects on the bay's visual character (item I.c) will be less-than-significant.

Item I.d: Light or Glare. The proposed project is expected to have less effect as a consequence of light or glare than previous bottom culture operations, which sometimes included the use of bright night-time lighting by the dredge. The current proposal does include occasional late evening or early morning activities, but these activities don't include the use of bright "flood-lighting," and the proposed project's potential effects on light and glare (item I.d) are considered to be less-than-significant.

The 1999 MND concluded that aesthetic effects that would result from proposed mariculture operations would not cross a threshold of environmental significance. The District affirms that conclusion in this

assessment. While the mariculture operations will be visible to residents and visitors to the Humboldt Bay region, the aesthetic concerns are judged not to cross a threshold of environmental significance. Moreover, the current proposal would use less area on the bay bottom (300 acres instead of the originally proposed 500 acres), and the potential visual effects from the current proposal will be less than those considered in the 1999 MND.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
II.	**AGRICULTURAL RESOURCES.** In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	[ ]	[ ]	[ ]	[X]
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	[ ]	[ ]	[ ]	[X]
c.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that the proposed project would have no effects on agricultural resources. The District affirms that conclusion.

It should be noted that mariculture is defined as "agriculture" pursuant to § 30100.2 of the Coastal Act (Public Resources Code, Division 20): "Aquaculture means a form of agriculture as defined in Section 17 of the Fish and Game Code. Aquaculture products are agricultural products, and aquaculture facilities and land uses shall be treated as agricultural facilities and land uses in all planning a permit-issuing decisions governed by this division."

In addition, Coastal Act § 30411(d) directs that "(a)ny agency of the state owning or managing land in the coastal zone for public purposes shall be an active participant in the selection of suitable sites for aquaculture facilities and shall make the land available for use in aquaculture when feasible and consistent with other policies of this division and other provision of law."

While the District is not authorized to use the Coastal Act's definitions for local decision-making, the compatibility of mariculture with the Coastal Act is a useful test of potential compatibility of the activity with coastal planning procedures under state law.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
III.	**AIR QUALITY.** When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a.	Conflict with or obstruct implementation of the applicable air quality plan?	[ ]	[ ]	[ ]	[X]
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	[ ]	[X]	[ ]	[ ]
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	[ ]	[X]	[ ]	[ ]
d.	Expose sensitive receptors to substantial pollutant concentrations?	[ ]	[ ]	[ ]	[X]
e.	Create objectionable odors affecting a substantial number of people?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

Items III.b and III.c: Compliance with Air Quality Standards and Cumulative Planning Concerns. The 1999 MND concluded that the proposed project would have a less-than-significant effect on air quality. Since the preliminary environmental review for the proposed project was completed, the "attainment" status of the North Coast Air Basin has not changed, but the degree of regulatory oversight provided by the North Coast Unified Air Quality Management District (AQMD) has been increased, particularly with respect to particulate matter smaller than 10 micrometers (PM_{10}), for which the air basin is in "nonattainment" status under California regulations. The North Coast Air Basin is currently in attainment of all state and Federal ambient air quality standards, with the exception of the state standard for PM_{10}.

Vessels associated with Coast's mariculture operations have combustion engines which generate particulate matter; however, combustion engines used by Coast are stated by the applicant to comply with all applicable emissions regulations. Coast has upgraded, and continues to upgrade, most of its vessel engines (primarily outboard motors) to modern four-stroke engines, reducing emissions. Given that Coast uses a limited number of vessels and is not proposing to increase the number of vessels, emissions of particulate matter because of the applicant's operations are not expected to increase substantially, and may decrease, during the term of any operations carried our pursuant to a District approval.

The emissions that result from the applicant's proposed activities could constitute a portion of an ongoing "nonattainment" of required state standards, which would be, in CEQA terms, a portion of a significant

cumulative environmental effect (items III.b and III.c). The District lacks direct jurisdiction over air quality, and thus lacks direct authority to require mitigation for potential air quality impacts. The North Coast Unified Air Quality Management District does regulate vessel engine emissions pursuant to several air quality plans. The District is entitled to rely on the air quality management efforts of the planning efforts of the AQMD with respect to mitigating environmental effects of the applicant's proposed activities.

Potential Effect III-1: Contribution to Air Quality Nonattainment Status

> Engines on vessels used in the applicant's mariculture operations in Humboldt Bay will release particulates. Because the North Coast Air Basin is "nonattainment" pursuant to state regulations, the release of these particulates would contribute to an environmental impact that is cumulatively significant by definition.

CEQA addresses circumstances such as this through reliance by lead agencies on the regulatory oversight of relevant agencies carrying out statewide policy. CEQA Guidelines § 15064 (h) establishes a procedure that allows lead agencies, including the District, to rely on environmental standards promulgated by other regulatory agencies, such as the AQMD, with respect to pollutant regulation. The AQMD has adopted several air quality management plan elements, specifically including a "PM_{10} Plan." The District finds that Coast Seafoods would not contribute to a cumulatively significant air quality impact to the extent that Coast Seafoods complied with the PM_{10} Plan adopted by the AQMD and all attendant regulations established thereto. This conclusion is incorporated into the following mitigation measure:

Mitigation Measure III-1 (Air Quality)

> *The applicant shall consult with the North Coast Unified Air Quality Management District with respect to the requirements of adopted AQMD regulatory plans. The applicant shall comply with the requirements of all adopted air quality plans at all time, including plans covering particulate emissions, and shall implement all actions required by the AQMD for the applicant's mariculture operations.*

The applicant has agreed to consult with the North Coast Unified Air Quality Management District with respect to the requirements of adopted AQMD regulatory plans, and will comply with the requirements of all adopted air quality plans at all time, including plans covering particulate emissions, and will implement all actions required by the AQMD for Coast's mariculture operations. The District finds that the applicant's implementation of this measure will reduce potential air quality impacts to less-than-significant levels.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	[ ]	[X]	[ ]	[ ]
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	[ ]	[ ]	[X]	[ ]
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	[ ]	[ ]	[X]	[ ]
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	[ ]	[ ]	[X]	[ ]
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	[ ]	[ ]	[ ]	[X]
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

Based on information that was available in 1998, the District's 1999 MND concluded that the level of knowledge about the impacts of Coast Seafoods' operations did not permit informed judgements about the real impacts of the proposal in several subject areas, and that this was particularly a concern for biological subjects. However, the District recognized that the applicant would need to continue its mariculture operations in order to allow the development of information about the effects of those operations on the bay's biological resources. The District determined that monitoring the effects of mariculture on biological resources would provide the information needed if the District were to carry out

an assessment of the impacts of those operations (i.e., ground culture on about 500 acres of bay bottom). In the interim the preliminary assessment identified potentially significant effects, specifically with respect to potential impacts to:

- Federally listed species (salmonids and birds, including habitat elements)
- Sensitive natural communities [particularly eelgrass (*Zostera marina*)]
- Migration corridors

The District concluded that the application of a number of mitigation measures would reduce the potentially significant effects to less-than-significant levels while the necessary studies were carried out. The mitigation measures included additional studies to be completed by the Western Regional Aquaculture Center (WRAC) and by Coast Seafoods. The results of those studies, and other studies that were not expressly identified in the preliminary MND, are now available and have been incorporated into the current assessment. The assessment of the applicant's proposal on biological resources also incorporates the content of several documents that are not generally available and which are therefore attached to this assessment: (1) the applicant's Biological Assessment (BA) (Attachment E, particularly pages 41-66), (2) a February 17, 2005, letter from Jones & Stokes to NOAA Fisheries (National Marine Fisheries Service [NMFS]; included in Attachment E), and (3) a November 8, 2006, Technical Memorandum from Jones & Stokes to the District comparing historic (baseline) operations to proposed operations (Attachment F).

The assessment of potential impacts resulting from the applicant's proposed actions is based on the conditions and practices in effect in 1995/1996, including culturing of shellfish on the bay bottom, hydraulic dredging, shell deposition, bat ray removal, and other practices that are no longer included in the applicant's activities within Humboldt Bay. The applicant's adoption of off-bottom culture as a practice to avoid or reduce impacts to the bay's resources was directly related to the identification of bottom culture impacts, and the District identifies this change in practices as a primary mitigating element in this assessment.

The District believes that it is germane for this assessment to summarize comments from a number of regulatory and trustee agencies urging the District and/or the applicant to adopt off-bottom culture in order to reduce or avoid impacts:

- *A March 12, 1998, letter from the California Fish and Game Commission:* "It is the Department and Commission's position that moving to an off-bottom culture technique for oyster culture in Humboldt Bay will have far less impact to eelgrass beds and wildlife in general than the current bottom culture techniques."

- *A February 6, 1998, letter from Bruce G. Halstead, United States Department of the Interior, Fish and Wildlife Service, to Lt. Colonel Richard G. Thompson, District Engineer, United States Army Corps of Engineers:* "We also appreciate Coast Seafoods' stated commitment to change their operations over the next three years to largely off-bottom culture techniques. We believe that the conversion to off-bottom methods coupled with changes in culture locations are the primary means of avoiding and minimizing project impacts to fish and wildlife resources in Humboldt Bay." ... "The Service, along with the California Department of Fish and Game (CDFG), and others, encouraged Coast Seafoods to change their culture methods from bottom to off-bottom techniques."

- *A January 21, 1998, letter from James Bybee, United States Department of Commerce, National Oceanic and Atmospheric Administration to Lt. Colonel Richard G. Thompson, District Engineer, United States Army Corps of Engineers:* "The National Marine Fisheries Service recommends

increased use of off-bottom culture to further reduce the impacts to southern Oregon/northern California coastal coho salmon and northern California steelhead trout."

- *A June 16, 1997, letter from Bruce G. Halstead, United States Department of the Interior, Fish and Wildlife Service, to Lt. Colonel Richard G. Thompson, District Engineer, United States Army Corps of Engineers:* "We believe that the use of off-bottom culture techniques, which have been successfully employed in other locations, may be the answer to many of these issues and would greatly reduce or eliminate the impacts of oyster culture that we are concerned about."

- *A June 25, 1997, letter from James Bybee, United States Department of Commerce, National Oceanic and Atmospheric Administration to Lt. Colonel Richard G. Thompson, District Engineer, United States Army Corps of Engineers:* "We encourage you to require the applicant [Coast] to begin the process of converting present culture methods, even if it is phased over time."

These comments were delivered within the same time frame in which the District was initiating studies identified in the 1998 Mitigated Negative Declaration (MND). The District (as well as the applicant) understood the comments to indicate that converting oyster culturing operations from bottom culture to off-bottom culture constituted a mitigation measure that substantially reduced the environmental consequences of the culturing operations on the bay ecosystem. The District affirms that conclusion in this assessment: *the conversion of the applicant's operations to off-bottom culture constitutes a primary mitigation measure (a change in practices) that avoids and/or reduces impacts that resulted from culturing practices in effect at the time the applicant's proposal was initially considered.*

The District also finds that the reduction in operational footprint from 500 acres to 300 acres is a primary mitigation measure for the potential adverse impacts to biological resources that were identified in the 1998 MND.

Item IV.a: Sensitive Species and their Habitats

Listed Salmonids. The 1999 MND identified Humboldt Bay as an element in the habitat of several salmonid species (now identified as "Evolutionarily Significant Units" or ESUs) that were already considered "sensitive" by both the California Department of Fish and Game and the National Marine Fisheries Service (NMFS):[1] chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), and steelhead (*O. mykiss*). The MND identified a concern about potential effects of the oyster culturing operations in eelgrass beds on the Arcata Bay bottom as a potentially significant CEQA concern because of these potential effects on listed fish species, and the MND identified a number of focused research questions that should be addressed in order to allow the District to reach informed judgements about the significance of the effects.

In the period during which the District's annual review and approval process was in effect, the status of the three ESUs in coastal northern California was modified, and all three ESUs are formally listed pursuant to both the federal Endangered Species Act (ESA) and the California Endangered Species Act. In addition, Humboldt Bay and its tributaries have been identified pursuant to the federal ESA as "critical habitat" for all three ESUs. The federal "critical habitat" designation does not directly affect District reviews (responsibilities pursuant to the designation exist for federal agency approval processes), but the District takes cognizance of the federal designations in the CEQA process because of this checklist item.

1 NMFS is the federal agency charged with federal Endangered Species Act oversight responsibility for salmonids; in this respect NMFS assumes the role identified for the U.S. Fish and Wildlife Service in the checklist.

Potential Effect IV-1: The Proposed Project May Adversely Affect Listed Salmonid Species or their Habitat

The proposed project is located within areas that are known to be used by adults and juveniles of three salmonid ESUs listed pursuant to federal and state Endangered Species Acts, and the proposed project could adversely affect one or more of these species or their habitats

The proposed project's potential effects on these ESUs and the associated habitat were addressed in a Biological Opinion (BO) issued by the National Marine Fisheries Service (NMFS) in conjunction with a Clean Water Act section 404 permit application considered by the U. S. Army Corps of Engineers (NMFS 2005). The NMFS BO, and a separate opinion submitted to the Corps by the U.S. Fish and Wildlife Service (USFWS 2005), concluded that the project was "not likely to adversely effect" listed species and not likely to destroy or adversely modify designated critical habitat[2]. A determination of "not likely to adversely effect" is effectively synonymous with an insignificant and discountable effect on these species. (Endangered Species Consultation Handbook, page 3-12; NMFS and USFWS 1998). NMFS has involved CDFG throughout the ESA consultation process, and the NMFS opinion is deemed in this assessment to reflect the concerns of the CDFG.

The conclusion that the proposed project will not adversely affect the listed species or their designated critical habitat is explicitly based on the incorporation into the proposed project of all of the mitigation measures that are identified in this assessment (summarized explicitly below). Based upon the assessment carried out by the appropriate federal agency, the District finds that the effects of the proposed project on these listed ESUs or their habitat will be mitigated by the proposed measures to a level that is less-than-significant.[3]

Other Listed Species. In other contexts the District has considered fish, wildlife, and plant species that have been identified as "sensitive" by a number of different agencies and private groups (HBHRCD 2006); that assessment is incorporated by reference as if fully set forth. Few of the formally designated species identified in that assessment appear likely to be directly affected by the proposed project.

Two bird species that nest in Arcata Bay, which have been identified as "sensitive" by the U.S Fish and Wildlife Service or the California Department of Fish and Game, could be subject to nesting-related impacts because of the proposed operations: (1) Caspian tern (*Sterna caspia*), and (2) double-crested cormorant (*Phalacrocorax auritus*). However, the applicant has already agreed to incorporate a mitigation measure that is expected to obviate potential impacts to Caspian terns, and there is no current evidence that supports a conclusion that the proposed project would affect the cormorant nesting colony in the ruins of the old Arcata Wharf. The District finds that the potential effects of the proposed project

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2 It should be noted that in its Biological Opinion, NMFS used a baseline that included speculation on "future anticipated base conditions". This speculative approach resulted in certain conditions which currently exist to be inappropriately characterized as effects of the project. The approach used by NMFS with respect to existing baseline conditions is not valid under CEQA. See CEQA Guidelines, § 15125(a) (environmental setting constitutes the baseline physical conditions "as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced"); Bloom v. McGurk, 26 Cal.App.4th (1994) 1307, 1315 n.3 (potential impacts must be examined in light of the existing physical environment at the time project is approved)(citing City of Carmel-by-the-Sea v. Board of Supervisors (1986) 183 Cal.App.3d 229, 246). See also EPIC v. County of El Dorado (1982) 131 Cal.App.3d 350, 354 (assessment must be of the "actual environment" or existing physical conditions).

3 This topic is covered extensively in the Environmental Impact Report prepared by the District for the recently adopted Humboldt Bay Management Plan (HBHRCD 2006).

on these species will be less-than-significant with the implementation of the mitigation measures agreed to by the applicant.

Item IV.b: Sensitive Natural Communities

Humboldt Bay as a whole can be considered to be a "sensitive natural community" in some senses, but identifying the entire bay as "environmentally sensitive" is essentially the same thing as saying that the Pacific Ocean is environmentally sensitive; this classification must be applied in much narrower terms to be useful in an environmental review context. Local, state, and/or federal responsible or trustee agencies (including the cities of Arcata and Eureka, the California Department of Fish and Game and the California Coastal Commission, and the National Marine Fisheries Service) have identified eelgrass (*Zostera marina*) meadows (also identified in some contexts as "seagrass meadows" or eelgrass/seagrass "beds") as a sensitive community type that occurs within the bay. The District has similarly found that eelgrass beds in Humboldt Bay are an environmentally sensitive community type (HBHRCD 2006, Chapter 10). Therefore, a potentially significant effect on eelgrass meadows would be an environmentally significant impact to a "sensitive community type" pursuant to the requirements of CEQA, an effect that crosses an identified threshold of significance.

Potential Effect IV-2: Potential Reduction in Eelgrass Coverage and Density

> The proposed mariculture project could result in reduced density or areal coverage in eelgrass, an environmentally sensitive habitat type for Humboldt Bay.

The District's staff and decision-makers are knowledgeable about the existing scientific information about the effects of long-line oyster mariculture on eelgrass. This subject is currently attracting active interest from scientific and applied research programs. However, despite the research carried out in Humboldt Bay and elsewhere since the 1999 MND was adopted, a clear relationship between mariculture practices and a variety of parameters relating to eelgrass's ecological characteristics remains elusive. Further, the "best management practices" that the District (and the Western Regional Aquaculture Center) had anticipated as a result of the studies that were conducted in Humboldt Bay and elsewhere were not forthcoming.

In the Humboldt Bay Management Plan EIR (HBHRCD 2006), the District identified a potentially significant effect on eelgrass from all of the activities that occur in Humboldt Bay. That conclusion was essentially an assessment of the cumulative effects of bay management; and was not a consideration of the effects of this proposed project. The consideration of the effects of the proposed project that the District must make is included in this assessment.

A detailed analysis on the proposed project's potential effects to eelgrass is presented in the applicant's BA, on pages 54-58; in the February 17, 2005, letter to NMFS (both in Attachment E); and again in the November 8, 2006, Technical Memorandum (Attachment F). These analyses indicate that the project will not reduce eelgrass when compared to the 1997 baseline conditions. The District has carefully weighed the assessments presented by the applicant, those included in the 2005 NMFS Biological Opinion, the conclusions in the WRAC study (Rumrill and Poulton 2004), and other scientific and agency management studies in reaching the conclusions indicated in this assessment.

A recent study (Dealteris et. al. 2004) found that aquaculture apparatus (e.g., the long-lines and the supports) provides robust habitat value for numerous aquatic species, particularly with respect to habitat values in eelgrass and in non-vegetated areas. The study indicated that aquaculture gear provides habitat value for a variety of aquatic species throughout the year. Habitat values in eelgrass were high during some seasons but not as high in all seasons as those associated with culture apparatus. Species abundance

and richness were higher in the culturing apparatus during all times of the year, compared to those in eelgrass; species diversity was also higher (but not significantly so) in aquaculture gear as compared to eelgrass. Habitat value for both aquaculture gear and eelgrass were significantly higher than for non-vegetated areas. The Dealteris et al. (2004) study concluded that "shellfish aquaculture gear has substantially greater habitat value than a shallow non-vegetated seabed, and has habitat value at least equal to and possibly superior to submerged aquatic vegetation."

Another recently completed study, carried out by the USFWS's Arcata office, evaluated fish communities in eelgrass meadows in Humboldt Bay, in long-line oyster culture, and in mudflats in Arcata Bay (Pinnix et al. 2005). The study concluded that catches differed significantly among habitats, with greater catches in oyster culture than in mudflat or in eelgrass habitat. The study found virtually no evidence that the federally and state-listed salmonids made extensive use of the bay's eelgrass beds.[4]

On balance, the District has concluded that the proposed project, as mitigated, will not result in significant impacts to eelgrass within the analytical framework that this assessment uses. This conclusion is based on the legally defined baseline for this assessment as the conditions and practices in effect at the time that the District assumed permit authority for mariculture in Humboldt Bay.

The District further finds that the proposed project, as mitigated by the measures identified below, substantially reduces the effects that would have resulted from the project as originally proposed to the District. The mitigation measures are expected to result in a net increase in the extent of eelgrass coverage and density within the locations where mariculture is practiced, compared to the conditions that would have resulted from continuing the practices included in the original 1996 application.

Item IV.c: Federally Protected Wetlands

Humboldt Bay is a marine embayment and is subject to federal regulation pursuant to Section 404 of the Clean Water Act. The applicant has received approval for essentially the same project covered by this assessment from the U.S. Army Corps of Engineers. The Corps approval incorporated most of the same practices that are identified in this assessment as mitigation measures. Therefore the District finds that the proposed project, as mitigated with the measures to which the applicant has agreed, will not result in significant impacts to federally protected wetlands.

Item IV.d: Movement and Migratory Corridors.

Several studies have been completed evaluating the potential impacts of oyster culture operations, specifically long lines, on fish and wildlife movement and fish and wildlife migratory corridors and nursery areas.

In the HBMP EIR (HBHRCD 2006) the District identified Humboldt Bay as providing important habitat values for a group of bird species that utilize the bay's habitats as part of internationally important ecological context. These birds include Pacific brant (*Branta bernicla nigricans*) and a group of shorebird species that use the bay's habitats extensively during migration. Pacific brant, as a species, has a known association with eelgrass, including eelgrass in Arcata Bay, and the considerations regarding

4 As summarized in the HBMP EIR, other studies coordinated by Department of Fish and Game biologists have found that salmonids in the Humboldt Bay region make extensive use of the truly estuarine reaches of streams that are tributary to the bay. As summarized in the EIR, the District has interpreted these science findings to indicate that the emphasis on eelgrass as salmonid habit is misplaced. However, additional research results are required in order to formally validate that scientific model.

impacts to eelgrass in this section apply to Pacific brant as well. Pursuant to measures identified in the 1999 MND, the District and the applicant jointly sponsored studies of the potential impacts of long-line mariculture on shorebirds. Based on the resulted reported in those studies (Moore 2001), the District concludes that long-line mariculture is unlikely to create significant adverse impacts for shorebirds.

The applicant has, in addition, agreed to implement mitigation measures that are expected by the District to avoid causing adverse effects on harbor seals (*Phoca vitulina*) and other marine mammals, a subject considered in the 1999 MND to represent a greater degree of environmental effect than the District now believes to be the appropriate, based on monitoring data obtained from the applicant since that MND was adopted.

As noted above, recent studies have demonstrated that oyster culture apparatus provides habitat value for many marine organisms, offsetting habitat value reductions that may result from this project. In general the District cannot absolutely state that the habitat value for the wide range of species that occur in Arcata Bay are fully compensated, owing to a lack of scientific study, although the District has concluded that there is no inherent reason to believe that habitat values provided by culture apparatus are lower than those in the same bay regions without the apparatus. It remains a potential conclusion that oyster culture apparatus actually provides important subtidal structures for juvenile rockfish and other desirable species within the bay, and that the oyster culture apparatus is a desirable habitat feature that provides more habitat value than the bay-bottom habitat that it replaces. The existing data are inadequate to address these possibilities.

Much of the discussion about "fish migration" in Humboldt Bay is focused on salmonids. As summarized in the applicant's BA, habitat distribution and use studies in other regions indicate that juvenile salmonids tend to occupy deeper water after reaching a size of ~50 mm (Fresh et al 2004, Haas et al 2002, Miller and Sadro 2003, Simenstad and Cordell 2000, Toft et al. 2004). In Humboldt Bay these deeper water areas are generally only found in the main navigation channels and larger tidal channels. The majority of oyster culture operations occur in intertidal (shallow water) areas. The study results reported by Pinnix et al. (2005) are fully consistent with this hypothesis, because juvenile salmonids essentially avoided the sampled eelgrass beds and mariculture areas in Arcata Bay.

The use of eelgrass beds by salmonids in Humboldt Bay was discussed extensively in the Humboldt Bay Management Plan EIR (HBHRCD 2006); that discussion is incorporated by reference. Summarizing the results generally, the existing evidence indicates that the role of eelgrass in the marine environment that is Humboldt Bay has been misinterpreted, and that the "estuarine environment" that is known to be important for rearing juvenile salmonids occurs in the Humboldt Bay region within the lower, estuarine reaches of the rivers in which the salmonids spawn, rather than in the marine conditions in eelgrass meadows and tidal flat habitats in the bay.

Herring (*Clupea harengus*) are known to spawn within Humboldt Bay, typically on eelgrass. The primary locations where herring spawn in Arcata Bay are distributed throughout an area known as East Bay near the mouths of Jacoby and Freshwater Creeks. A portion of this area (23 acres) is proposed for off-bottom oyster culture. The existing data on herring spawning in Humboldt Bay do not support the argument that oyster culture negatively affects herring spawning. CDFG data (2004) indicated that herring spawning was highly variable but that the long-term trend in herring spawning in the area of east Arcata Bay used for mariculture demonstrates a decrease in herring spawning as the area used for oyster aquaculture decreased, a parallel effect opposite what would be expected if oyster culture operations were negatively affecting herring spawning. CDFG herring spawning protocols and data include areas with oyster culture because herring are known to spawn on and around aquaculture structures (CDFG 2005).

The applicant has adopted a mitigating practice of not harvesting oysters where herring have spawned for a two-week period after spawning has occurred, thereby further reducing any potential for impacts to herring spawn from oyster culture operations. The 23 acres of East Bay beds that are proposed for planting are also generally above the elevations where herring spawning typically has been observed. The District finds that this measure reduces potential impacts to herring to a level that is less-than-significant.

Item IV.e: Conflicts with Local Policies and Ordinances.

The proposed project is consistent with the District's adopted Humboldt Bay Management Plan. The District finds that the proposed project results in a "no impact" finding for this topic.

Item IV.f: Conflicts with Adopted Natural Community Conservation or Habitat Conservation Plans.

The applicant's proposed operations do not conflict with any approved or adopted natural community conservation plan or habitat conservation plan. Therefore the District concludes that the appropriate checklist response for this topic is "no impact."

Mitigation Measure Identification

The following mitigation measure is a summary of the measures identified by the District and agreed to by the applicant.

Mitigation Measure IV-1 (Biological Resources). The applicant shall implement all of the following elements in order to assure that the proposed project's effects on biological resources are reduced to less-than-significant levels.

The District has identified a number of measures that will reduce the impact of the proposed project on biological resources in the Humboldt Bay ecosystem, and the applicant has agreed to implement those measures. The measures include:

- *The operational footprint will be reduced from 500 acres to 300 acres.*
- *The applicant will not initiate any new bottom culture in Humboldt Bay. All previously existing bottom culture beds shall lie fallow unless such beds are included within the 300-acre operational footprint discussed above to be used for long line off-bottom culture.*
- *The applicant will not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester within Humboldt Bay.*
- *The applicant will not construct or use bat ray fencing within Humboldt Bay.*
- *The applicant will submit to the District by December 1 of each year an annual report describing the status of each bed within its 300-acre operational footprint.*
- *Where feasible, the applicant will avoid long line harvester vessel contact with the bay bottom. To avoid potential impacts to eelgrass from shading, the applicant will not anchor long line harvesters in such a way as to shade the same area of eelgrass for a period exceeding twelve (12) hours.*

- *No take or harassment (as defined by the Marine Mammal Protection Act) of any marine mammal will be allowed.*

- *All oyster culture activities, for the bed identified in Attachment A as "Sand Island NK" will remain at least 100 meters away from the MHHW line of Sand Island.*

- *The applicant will not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into marine waters.*

- *The applicant will not intentionally deposit shells or any other material on the sea floor. Natural deposition of shells and other materials will be minimized to the maximum extent feasible.*

- *During the months of December, January, and February, the applicant will visually survey those beds to be worked on each day prior to harvesting and/or planting, to determine whether herring has spawned on eelgrass, culture materials, or substrate. If herring spawning is observed, the applicant will (a) postpone for two weeks harvesting and planting activities on those beds where spawning has occurred, and (b) notify the California Department of Fish and Game's Eureka Marine Region office within 24 hours of observation of herring spawning.*

- *The applicant will provide in-kind support to the National Marine Fisheries Service as it conducts additional studies of the interactions among oyster culture and eelgrass.*

- *The applicant will maintain in place its leases with the District, the City of Eureka, and the Karamu Corporation (approximately 3,645 acres). Copies of these leases are available upon request. The applicant will exercise its renewal options, and satisfy its payments and other obligations, in each of the aforementioned leases to ensure that all three leases remain in effect until at least the year 2015. Aside from the 300-acre operational footprint established pursuant to the permit, Coast will not conduct oyster harvesting activities on any of its leased lands. This cessation of activity is intended to offset any perceived environmental impacts of Coast's operations on that 300-acre operational footprint.*

- *The applicant will transfer fifty (50) acres of the tidelands it owns in Humboldt Bay to the District or an environmental conservation organization subject to the consent of State and local regulatory agencies, to ensure said transferred tidelands are permanently protected from any development. The applicant shall consult with the California Department of Fish and Game and the District to select an appropriate 50 acres for said transfer.*

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	[ ]	[ ]	[ ]	[X]
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	[ ]	[ ]	[ ]	[X]
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	[ ]	[ ]	[ ]	[X]
d.	Disturb any human remains, including those interred outside of formal cemeteries?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that mariculture operations in Arcata Bay would have no effect on cultural resources. In the absence of any evidence indicating a different conclusion, the District affirms the prior judgement.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VI.	**GEOLOGY AND SOILS.** Would the project:				
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	[ ]	[ ]	[X]	[ ]
	2. Strong seismic groundshaking?	[ ]	[ ]	[ ]	[X]
	3. Seismic-related ground failure, including liquefaction?	[ ]	[ ]	[X]	[ ]
	4. Landslides?	[ ]	[ ]	[ ]	[X]
b.	Result in substantial soil erosion or the loss of topsoil?	[ ]	[ ]	[ ]	[X]
c.	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	[ ]	[ ]	[ ]	[X]
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	[ ]	[ ]	[ ]	[X]
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

Item VI.a.3: Liquefaction. The 1999 MND concluded that geological and soils concerns from Coast's operations would not cross thresholds of environmental significance, a conclusion affirmed herein. For the greatest part, the proposed mariculture project is not associated with potential geological or soil-related effects. However, there is a minor potential that the project could be associated with risks to the applicant's personnel because of liquefaction.

The Humboldt Bay region is subject to strong ground shaking from earthquakes that may occur along a number of regionally significant faults. The applicant's mariculture operations that are the subject of the current application do not involve structures that may fail during seismic shaking (item VI.a.1), and this potential effect is judged not to cross a threshold of significance (tsunami concerns are considered in Section VIII). There is a minor concern that strong seismic shaking could partially liquefy bay-bottom sediments in Arcata Bay in a way that could affect Coast Seafoods' field personnel (item VI.a.3). This Initial Study judges the potential that liquefaction will be directly hazardous to the applicant's personnel to be highly improbable (that is, to have a very low, although non-zero, probability of occurrence during any given short interval, such as a day), and therefore to be less-than-significant for CEQA assessment purposes; mitigation is not required. The proposed activities of the project are judged not to affect any of the other geological or soils-related concerns.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	[ ]	[ ]	[ ]	[X]
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	[ ]	[X]	[ ]	[ ]
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	[ ]	[ ]	[ ]	[X]
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	[ ]	[ ]	[ ]	[X]
e.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	[ ]	[ ]	[ ]	[X]
f.	Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	[ ]	[ ]	[ ]	[X]
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	[ ]	[ ]	[ ]	[X]
h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

Item VII.b: Hazardous Materials. The proposed project, like all activities involving motorized equipment such as boats, is associated with a potential for fuel spills or leaks (item VII.b). This Initial Study identifies this as a potentially significant effect.

Potential Effect VII-1: Releases of Fuels, Lubricants, and other Toxic Materials Resulting from Mariculture Activities

The proposed mariculture operations in Arcata Bay include elements that may be associated with the release of fuels, lubricants, and other hazardous materials into the bay's waters as a possible consequence of accidents or other unplanned events.

Coast Seafoods has strong incentives to avoid fuel or lubricant leaks or spills due to the sensitivity of shellfish to any exposure to such materials, and Coast has therefore developed and implemented a number of company procedures and policies to prevent leaks or spills. To limit the potential for accidental release of hazardous materials into the environment, the District has identified, and the applicant has agreed to implement, the following mitigation measure:

Mitigation Measure VII-1 (Hazardous Materials)

The applicant shall develop and implement an equipment maintenance program for all vessels that are use in its mariculture activities, and shall consider the likelihood of release of fuels, lubricants, paints, solvents, or other potentially toxic materials that may be associated with these vessels as a result of accident, upset, or other unplanned events. The applicant shall prepare an annual summary statement that identifies the maintenance status of each vessel, and shall present this statement to the District for review; the applicant shall address any vessel maintenance concerns identified by the District.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VIII.	**HYDROLOGY AND WATER QUALITY.** Would the project:				
a.	Violate any water quality standards or waste discharge requirements?	[ ]	[ ]	[ ]	[X]
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	[ ]	[ ]	[ ]	[X]
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	[ ]	[ ]	[X]	[ ]
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	[ ]	[ ]	[ ]	[X]
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	[ ]	[ ]	[ ]	[X]
f.	Otherwise substantially degrade water quality?	[ ]	[X]	[ ]	[ ]
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	[ ]	[ ]	[ ]	[X]
h.	Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	[ ]	[ ]	[ ]	[X]
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	[ ]	[ ]	[X]	[ ]

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
j.	Contribute to inundation by seiche, tsunami, or mudflow?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

Item VIII.c: Sedimentation. The District's 1999 MND identified potential environmental concerns about the effects of the long-line structures on water circulation, which were considered to potentially result in increased siltation, thereby potentially altering benthic community structure. This concern is identified in the Environmental Checklist in item VIII.c. The MND identified a mitigation measure to address this concern in the form of additional studies to be completed by the Western Regional Aquaculture Center (WRAC) with assistance from the applicant.

The resulting studies found that sedimentation associated with long-line culture structures was dynamic (i.e., both sediment deposition and sediment erosion occurred in the same locations at different times), with no long-term changes in sediment elevations in the areas of the bay occupied by mariculture structures. Consequently this Initial Study reaches the judgement, with respect to item VIII.c, that potential effects of the proposed long-line operations on sediment deposition or erosion are not environmentally significant, and no mitigation is required for this possible effect.

Item VIII.f: Water Quality. The potential effects of the proposed project on water quality (item VIII.f) result primarily from the actions of the applicant's equipment and personnel within the bay's tidelands. The operation of small watercraft is potentially associated with possible releases of fuel, lubricants, and other chemicals.

There are therefore a number of potential water-quality concerns that arise as potential project consequences, and the District identifies this effect as potentially significant.

Potential Effect VIII-1: Water Quality Impacts Resulting from Mariculture Activities

> The proposed mariculture operations in Arcata Bay include elements that may be associated with significant effects on water quality because of: (a) the release of hazardous materials, including fuels and lubricants (an effect addressed in Section VII); and (b) sediment, which is associated both with a number of pollutants and with direct and indirect impacts on aquatic species and communities.

As noted in Chapter 2 of this assessment, the applicant has proposed a number of project features that function to reduce potential effects from their operations. Several of the project features or components address potential water quality concerns, and are identified here as mitigation elements for the proposal's potential water quality impacts.

Mitigation Measure VIII-1 (Water Quality)

> *The applicant shall adopt all of the following practices as elements in its mariculture operations:*
>
> - *The applicant shall develop and implement an equipment maintenance program for all vessels that are use in its mariculture activities, as described in Section VII.*

- *The applicant shall not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester.*

- *To the extent feasible, the applicant shall avoid long-line harvester vessel contact with the bay bottom. The applicant shall similarly minimize the extent or degree of sediment mobilization associated with all of its other mariculture activities in the bay.*

- *The applicant shall not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into the bay's waters.*

The District concludes that the inclusion of these measures reduces potential water quality impacts from the applicant's operations to levels that are less-than significant.

The physical practices used in culturing oysters include sediment-disturbing activities, and the mobilized sediment could be considered to reduce water quality because of its potential effects on benthic communities. However, when evaluated in the environmental setting of Humboldt Bay, the District finds that the amount of sediment mobilized during mariculture operations is well within the range of sediment that is mobilized during natural events such as storms and days with strong northwest winds. Therefore the District does not identify sediment mobilization resulting from mariculture activities as an environmentally significant effect.

The District notes that the applicant is actively involved with the cities of Eureka and Arcata, Humboldt County, the North Coast Regional Water Quality Control Board, the California Department of Health Services, and other agencies in addressing potential point-source and nonpoint source water quality impacts with the bay. This process is formalized through the Humboldt Bay Shellfish Technical Advisory Committee (STAC) as stipulated in the Shellfish Protection Act of 1993. As a STAC member, Coast Seafoods has participated in identifying and addressing several water quality issues for Humboldt Bay. The District expects that Coast Seafoods will continue to participate in this endeavor, primarily because maintaining high water quality in Humboldt Bay is beneficial to the applicant's interests. The District generally expects that the operations of Coast Seafoods in Humboldt Bay will continue to have beneficial effects on water quality in the bay.

Items VIII.i and VIII.j: Flooding and Tsunami Risk. For the most part the proposed project does not expose people or structures to any significantly increased risks from possible meteorologically or seismically related flooding, because the proposal does not include structures or uses that are associated with large numbers of people. However, the proposed project involves having a few people on the bay's tidal flats, a location that is associated with potentially increased risks of exposure to flooding from locally generated tsunami events. These events will eventually occur in the Humboldt Bay region, because they are associated with the Cascadia Subduction Zone.

The District has considered the tsunami-exposure risks inherent in the project, and has judged that the potential tsunami risk to a small number of applicant personnel is statistically minor (that is, there is a very low, although non-zero, probability of tsunami occurrence during any given short interval, such as a day), and therefore the risk is less-than-significant for CEQA assessment purposes, and mitigation is not required.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
IX.	**LAND USE AND PLANNING.** Would the project:				
a.	Physically divide an established community?	[ ]	[ ]	[ ]	[X]
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	[ ]	[ ]	[X]	[ ]
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

As noted in the 1999 MND, Humboldt Bay uses are subject to District regulation pursuant to the District's own plans, as well as being subject to the Coastal Act and other state and federal laws. In addition, some areas of tidelands in the bay are subject to the jurisdiction of the City of Arcata and the City of Eureka, which have their own adopted "land use" plans. Because of the location of the proposed activities, they will not affect any upland land uses (item IX.a), and no Habitat Conservation Plan or Natural Community Conservation Plan currently in effect in the region covers the waters of Arcata Bay (item IX.c); no impacts will result from these concerns. However, there is a potential that mariculture uses in Arcata Bay could affect other uses of Arcata Bay that are identified in District planning documents and other coastal plans and land uses plans, including the designation of Humboldt Bay for conservation and recreational uses in addition to commercial uses that include mariculture.

Item IX.b: Planning Consistency. The District's recently adopted Humboldt Bay Management Plan (HBMP) identifies Arcata Bay as a region in which the "preferred" uses are related to conservation, and for which mariculture operations that are compatible with the conservation of environmental and recreational resources are also appropriate. Based upon the analyses carried out for this assessment, the District finds that the proposed project is compatible with the designations and management policies identified in the HBMP; that is, the proposed project is consistent with the use designations in the HBMP, and the proposed project does not cross a threshold of significance for plan-consistency evaluation.

In the 1999 MND the District concluded that Coast's operations would not significantly affect land use and planning concerns as expressed in the plans of other agencies (item IX.b). That MND identified potential impacts to land use and planning concerns that were related to possible effects on water quality and biological resources. For example, if Coast's operations were to have significant impacts to water quality or biological resources, then Coast's operations would also conflict with applicable land use plans. As discussed elsewhere in this document, mitigation measures will be implemented that will assure that Coast's current application will not lead to significant impacts to water quality, and the District concludes that no significant policy conflict exists with respect to water quality.

As discussed in Section IV, it is unclear that all potential effects of the proposed project on biological resources can be avoided completely, but mitigation measures will be implemented that reduce potential biological effects to levels that have been deemed (by the Coastal Commission) to be consistent with the requirements of the Coastal Act, and the District will conclude that the project therefore also does not represent a direct, significant conflict with other local coastal planning documents or policies pertaining to biological resources.

Circumstances regarding the planning context in the Humboldt Bay region have changed in the period since the prior CEQA review was conducted, and conservation concerns are more focused on the Bay ecosystem than was the case in 1998/1999. As noted in Section IV, however, the appropriate baseline for environmental assessment is the setting at the time the prior application was accepted, because the District explicitly identified the CEQA process associated with this application as a continuation of the review process begun in 1998. As is further noted in Section IV, there are a number of mitigation measures that the District requires of the applicant that reduce potential biological and/or conservation effects, and the District judges that these *biological and/or conservation concerns* remain below a threshold of significance *with respect to planning consistency.*

The 1999 MND also identified potential recreational conflicts with Coast's proposal, and identified mitigation measures for possible recreational conflicts. In the intervening period recreational uses of Humboldt Bay have become a more substantive management concern than previously (see Section XIV, below), and possible recreational conflicts are therefore also a planning issue. Nonetheless, the District has not identified specific, significant planning consistency conflicts between the Coast operation and any existing planning documents for Humboldt Bay. Virtually all adopted planning documents identify *both* mariculture and recreation as uses that should occur within Arcata Bay, and the current mariculture proposal does not prevent or significantly curtail recreational uses in most of Arcata Bay (although a potential for user conflicts does exist). Thus the mariculture uses are not a significant impact *with respect to planning consistency.*

Overall, the District finds that the proposed continuation of mariculture in Arcata Bay does not create a *planning* concern for the District or other local governments that crosses a threshold of environmental significance, and mitigation measures are not required that address any planning issues.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
X.	**MINERAL RESOURCES.** Would the project:				
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	[ ]	[ ]	[ ]	[X]
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that mariculture operations would not have any effect on mineral resources. No evidence has arisen to indicate a contrary result, and the District affirms the prior conclusion.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XI.	**NOISE.** Would the project:				
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	[ ]	[ ]	[ ]	[X]
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	[ ]	[ ]	[ ]	[X]
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	[ ]	[ ]	[ ]	[X]
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	[ ]	[ ]	[X]	[ ]
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	[ ]	[ ]	[ ]	[X]
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that sound from Coast's operations would be audible to residents and visitors to the Humboldt Bay vicinity, but concluded that the effect would not cross a threshold of environmental significance. Coast's operations include the use of several small watercraft which generate sound that is similar to, and typical of, other recreational and commercial watercraft in common use on the bay. Furthermore, the use of newer engines on many of Coast's watercraft will result in a further reduction in sound levels as compared to baseline conditions. Therefore the District affirms the prior conclusion that project-related sound levels (item XI.d) will not cross a threshold of environmental significance.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XII.	**POPULATION AND HOUSING.** Would the project:				
a.	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	[ ]	[ ]	[ ]	[X]
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	[ ]	[ ]	[ ]	[X]
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that the project would have no effect on population and housing. No evidence that would indicate a different conclusion has arisen since 1998/1999, and the District affirms the prior conclusion.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XIII.	**PUBLIC SERVICES.** Would the project:				
a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
	Fire protection?	[ ]	[ ]	[ ]	[X]
	Police protection?	[ ]	[ ]	[ ]	[X]
	Schools?	[ ]	[ ]	[ ]	[X]
	Parks?	[ ]	[ ]	[ ]	[X]
	Other public facilities?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The District's 1999 MND concluded that the proposed project would not produce significant effects on public services. The MND concluded that the Coast Seafoods project would result in a less-than-significant increase in oversight time allocated to the project by District staff. The expectation has been met, and additional staff time has been allocated to overseeing the District's management of Coast's activities; however, the District concludes that such an allocation of staff time is the District's obligation and that such a result in not an adverse effect. The District affirms the prior conclusion, and finds that the proposed mariculture project will not result in significant effects for public services.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XIV.	**RECREATION.** Would the project:				
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	[ ]	[ ]	[ ]	[X]
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that there would be a "Less than Significant Impact" on recreation as a result of Coast's operations. It was evident that the Coast Seafoods project would not have any effect on neighborhood parks or the kinds of recreational facilities normally associated with land development projects. The finding that there would be any effect at all on recreation was dependent on the existing and anticipated future recreational uses of Humboldt Bay by boaters, wind-surfers, hunters, clam-diggers, and similar practitioners of dispersed recreation. The District required an interim mitigation measure that directed Coast to monitor and report the presence and activity of recreational users within or near the mariculture operations in Arcata Bay. The monitoring efforts resulting from the measure have not identified any impacts to recreational users of the bay or any significant conflicts between mariculture facilities and possible recreational uses.

As noted previously in Section IX, planning policies and adopted planning documents for Humboldt Bay, including the District's plans and the planning documents adopted by the County of Humboldt and the cities of Arcata and Eureka, require that recreational opportunities be "balanced" with other legitimate uses, including mariculture. This concern is a "management concern" for the District and other governments, and requires that the District and the other governments acknowledge the multiple rights to use bay waters and the underlying bottom. However, absent an indication that the mariculture activities are affecting recreational uses or opportunities, the District would not find the mere presence of mariculture uses to be an adverse effect on recreation.

Because there is no evidence of recreational user conflicts or a reduction in recreational opportunity because of the mariculture facilities, the District finds in this extended Initial Study that the continued use of Arcata Bay tidelands for mariculture does not constitute an adverse impact on recreational uses or opportunities in Arcata Bay. Additional mitigation is not required.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XV.	**TRANSPORTATION/TRAFFIC.** Would the project:				
a.	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	[ ]	[ ]	[ ]	[X]
b.	Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?	[ ]	[ ]	[ ]	[X]
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	[ ]	[ ]	[ ]	[X]
d.	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	[ ]	[ ]	[ ]	[X]
e.	Result in inadequate emergency access?	[ ]	[ ]	[ ]	[X]
f.	Result in inadequate parking capacity?	[ ]	[ ]	[ ]	[X]
g.	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The 1999 MND concluded that the potential effects of the proposed mariculture operations would be associated with a minor potential for interference with waterborne access to parts of Arcata Bay for recreational users, but that the effects would not be environmentally significant. As noted in the preceding section, there is no evidence that the mariculture facilities and operations have affected boater access to the North Bay. Therefore the District concludes that the appropriate checklist responses should be that the continued project does not have an effect on transportation and/or circulation concerns.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVI.	**UTILITIES AND SERVICE SYSTEMS.** Would the project:				
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	[ ]	[ ]	[ ]	[X]
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	[ ]	[ ]	[ ]	[X]
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	[ ]	[ ]	[ ]	[X]
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	[ ]	[ ]	[ ]	[X]
e.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	[ ]	[ ]	[ ]	[X]
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	[ ]	[ ]	[ ]	[X]
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	[ ]	[ ]	[ ]	[X]

Discussion of Checklist Reponses:

The District's 1999 MND concluded that the mariculture proposal would have no potentially significant impact on utilities and service systems. No evidence has arisen that indicates a contrary condition, and the District affirms the prior conclusion.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVII.	**MANDATORY FINDINGS OF SIGNIFICANCE.**				
a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	[ ]	[X]	[ ]	[ ]
b.	Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	[ ]	[X]	[ ]	[ ]
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	[ ]	[ ]	[ ]	[ ]

Discussion of Checklist Reponses:

Mandatory Findings of Significance, if they exist for a proposal, are effects that require that an Environmental Impact Report be prepared unless mitigation measures are available that reduce the effects to less-than-significant levels. For the Coast Seafoods proposal, there is no indication that the proposal would cause direct, substantial adverse impacts to people (item XVII.c), and this item needs no further consideration. However, the District finds that the proposed implementation of the project might be associated with potential effects on the ranges of "rare or endangered" species (item XVII.a) and effects that could be part of "cumulatively considerable" environmental impacts (item XVII.b). Other aspects of these checklist items do not appear to be affected by the proposed project.

Item XVII.a: Effects on "Rare or Endangered Species."

Since the time of the 1998/1999 MND the District has understood that Coast's operations in Humboldt Bay could be associated with habitat loses or direct impacts on individuals of one or more of the three federally and state-listed salmonid species that pass through the bay [chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), and steelhead (*O. mykiss*)] (see Section IV). Between the completion of the preliminary MND and the preparation of this assessment, the bay's waters have been designated as being included among the "critical habitat" elements for these species. The bay's waters have been identified as providing one or more "Primary Constituent Elements" (PCEs) for the affected

salmonids. These relationships are described in the Biological Assessment (pp 41-66; Attachment E) prepared by the applicant, and in the Environmental Impact Report prepared by the District for the Humboldt Bay Management Plan (HBHRCD 2006).

As noted further in Section IV, the proposed project incorporates a number of mitigation measures that reduce the proposed project's effects on salmonids substantially below the levels that occurred prior to the conversion of the applicant's operations to off-bottom culture. Moreover, the District has previously found that existing evidence does not support a conclusion that mariculture operations in Arcata Bay are associated with significant impacts on the three listed salmonid ESUs (HBHRCD 2006). This checklist reaches the same conclusion, based upon the prior assessment, which is incorporated by reference.

Item XVII.b: Cumulative Effects.

The management of Humboldt Bay is associated with a great variety of activities (HBHRCD 2006). In an Environmental Impact Report prepared for the District's Humboldt Bay Management Plan, the District identified a potential significant cumulative effect on eelgrass as a consequence of the combination of activities that would result from the Plan. An assessment regarding the proposed project's potential effects on eelgrass is included under Section IV, above. To the extent that the proposed project contributed to a significant impact on eelgrass, then the proposed project would contribute to the significant cumulative effect.

The activities proposed for this project represent a significant reduction in the scale of mariculture activity, from an historical peak of operations on more than 1000 acres to 500 acres, and now to 300 acres. Furthermore, the proposed project completes the conversion from bottom culture to off-bottom culture as recommended by several resource agencies (see discussion in Section IV above) to reduce impacts from bottom culture harvesting methods to the Bay. Coast has also agreed to enact numerous mitigation measures to avoid, minimize, or offset any impacts associated with its activities (see Chapter 2). The District finds that the combined effect of all of these incorporated mitigation measures is a net "offset" reduction in impacts to eelgrass on a bay-wide scale, when considered with respect to the cumulative baseline conditions for this assessment. That is, the overall effect of the mitigation measures incorporated into the proposed project represents a net decrease in potential impacts to eelgrass, compared to the 1996-1997 baseline. Based on the net reduction in total impact, the District finds that the project's contribution to the cumulative impact is less-than-significant.

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Chapter 4

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Attachment B

Coast Seafoods Company
Bed Status Table

Bed Name	Acres	Plantg Priority	Bedstatus/use/culture type	# lines	Spacing	Plant Date
Clam Raft	0.31		Clam raft			
AC 3	4.64	12	Cleaned off ready for replant Proposed PLL			
EB 3-2	10.69	11	Cleaned off ready for replant Proposed PLL			
EB 5-1	7.14	9	Cleaned off ready for replant Proposed PLL			
EB 5-2	6.86	10	Cleaned off ready for replant Proposed PLL			
EB 7-1	9.86	4	Cleaned off ready for replant Proposed PLL			
EB 7-2	11.67	3	Cleaned off ready for replant Proposed PLL			
EB 8	5.24	2	Cleaned off ready for replant Proposed PLL			
MR 10	7.88	13	Cleaned off ready for replant Proposed PLL			
MR 11	4.42	14	Cleaned off ready for replant Proposed PLL			
MR 2	6.78	1	Cleaned off ready for replant Proposed PLL			
MR 5-2	6.09	6	Cleaned off ready for replant Proposed PLL			
MR 7-1	10.46	17	Cleaned off ready for replant Proposed PLL			
MR 8-2	6.69	15	Cleaned off ready for replant Proposed PLL			
MR 9	7.02	16	Cleaned off ready for replant Proposed PLL			
SI 3-1	6	7	Cleaned off ready for replant Proposed PLL			
SI 3-2	7.33	8	Cleaned off ready for replant Proposed PLL			
SI 4-1	5.49	5	Cleaned off ready for replant Proposed PLL			
Flupsy	0.04		Flupsy			
BI N k	2.86		Kumo Bed	441	2.5	5/1/2003
BI S k	4.84		Kumo Bed	864	2.5	6/1/2003
BI W k	2.37		Kumo Bed	441	2.5	6/1/2003
EB 4-3	1.36		Kumo Bed	532	2.5	5/2/2002
EB 4-3 k	1.64		Kumo Bed	198	5/2.5 and 10	2/1/2002
MR 1-3k	3.93		Kumo Bed	520	5/2.5 and 10	9/1/2001
MR 3-2	6.35		Kumo Bed	426	5/2.5 and 10	
MR 5-1 k	5.29		Kumo Bed	1139	2.5	12/1/2002
MR 6-1k	7.03		Kumo Bed	1134	5/2.5 and 10	8/1/2000
MR 6-2 k	10.86		Kumo Bed	849	5/2.5 and 10	10/1/2002
SI 2-2 k	2.74		Kumo Bed	274	5/2.5 and 10	12/10/2002
SI N k	6.67		Kumo Bed	994	2.5	5/1/2003
AC Nursery	1.19		Nursery			
GI Nursery	3.62		Nursery			
EB R&B	1		Rack and bag			
MR R&B	10.23		Rack and Bag			
MR 1-1	3.23		Removed from prod. 97 bed name reused on LL bed.			
MR 1-2	7.33		Removed from prod. 97 bed name reused on LL bed.			
MR 1-3	6.86		Removed from prod. 97 bed name reused on LL bed.			
EB 2-2	7.1		Removed from Production 00			
EB 4-3	3.53		Removed from Production 96			
GI 2	8.04		Removed from production 96			
AC 4	5.37		Removed from production 97			
EB 3-1	11.12		Removed from production 97			
EB 4-1	5.04		Removed from production 97			
EB 4-4	4.72		Removed from production 97			
EB 6-4	5.31		Removed from production 97			
BI 2-2	5.4		Removed from production 98			
BI 4-1	6.52		Removed from production 98			
BI 4-2	9.69		Removed from production 98			
BI 5-1	5.92		Removed from production 98			
EB 4-2	5.11		Removed from production 98			
BI 2-1	6.18		Removed from production 99			
EB 1-2	9.99		Replanted PLL 00	1660	5/2.5 and 10	1/1/2003

AC=Arcata Channel, EB=East Bay, MR= Mad River, SI= Sand ISland, BI=Bird Island, GI =Gunther Island,PLL=Pacific Long Line, Kumo=Kumamoto Oysters

1/30/2007

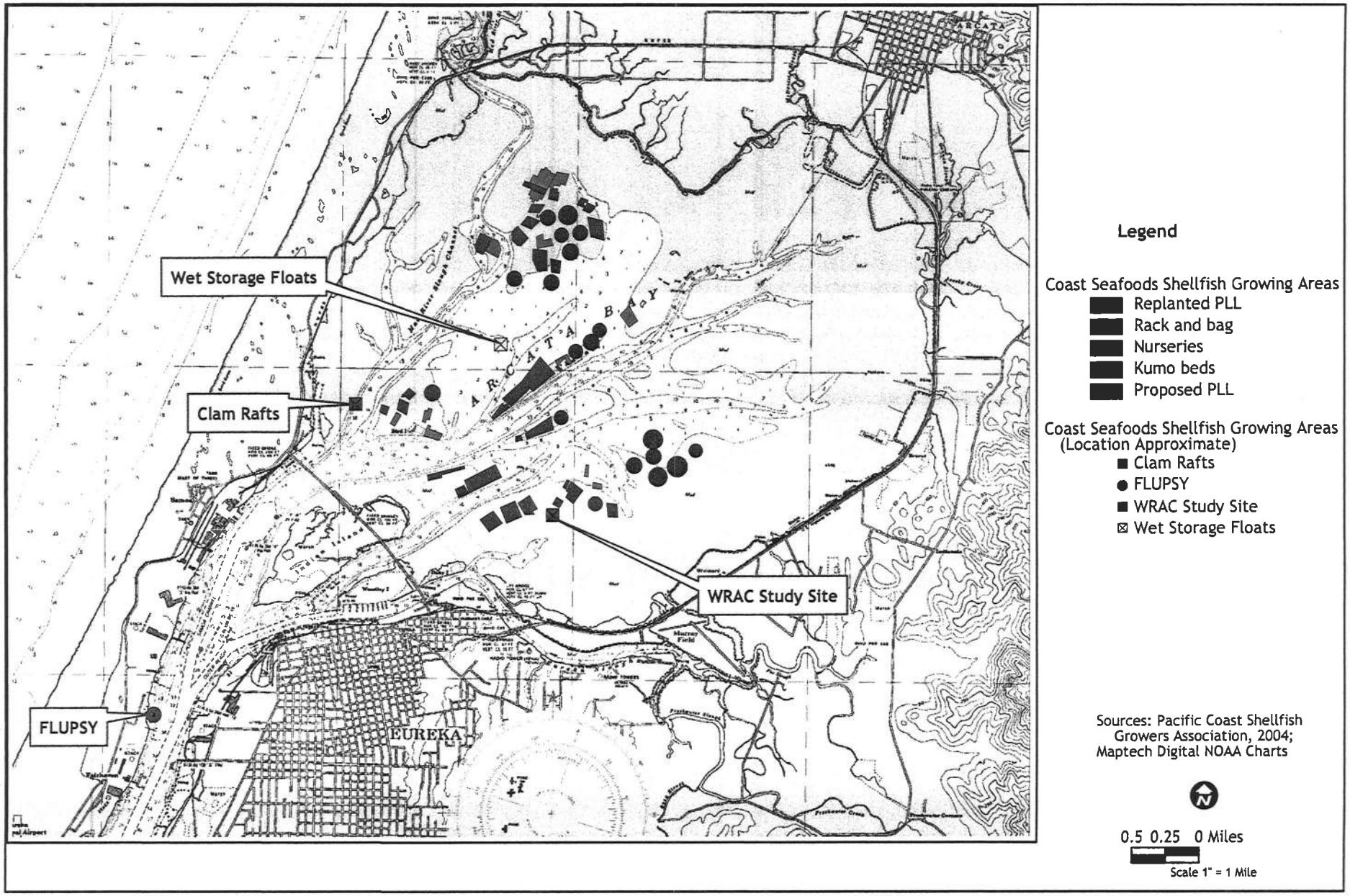
Attachment B

Coast Seafoods Company
Bed Status Table

Bed Name	Acres	Plantg Priority	Bedstatus/use/culture type	# lines	Spacing	Plant Date
EB 2-1	7.78		Replanted PLL 00	984	5/2.5 and 10	1/1/2001
SI 2-1	19.49		Replanted PLL 00	416	5/2.5 and 10	11/1/2001
SI 2-2	0.57		Replanted PLL 00	274	1/5,2/5,1/10,2/10	10-Jan
BI 1-1	2.26		Replanted PLL 01	302	5/2.5 and 10	9/2/2002
BI 1-2	4.34		Replanted PLL 01	463	5/2.5 and 10	1/2/2002
BI 3-1	2.67		Replanted PLL 01	240	5/2.5 and 10	1/2/2002
BI 3-2	7.33		Replanted PLL 01	744	5/2.5 and 10	4/1/2002
EB 6-1	7.3		Replanted PLL 01	1060	5/2.5 and 10	8/1/2001
EB 6-2	5.76		Replanted PLL 01	605	1/5,2/5,1/10,2/10	25-Jul
EB 6-3	4.89		Replanted PLL 01	675	5/2.5 and 10	7/1/2001
MR 4-1	7.1		Replanted PLL 01	1256	5/2.5 and 10	4/1/2001
EB 2-3	2.15		Replanted PLL 01 WRAC study plots	140	1.5, 2.5, 5, 10	6/1/2003
EB 1-1	8.65		Replanted PLL 02	670	1/5,2/5,1/10,2/10	10-Jan
GI 1-2	5.46		Replanted PLL 97	733	5/2.5 and 10	7/1/2002
MR 1-1	3.73		Replanted PLL 97	434	5/2.5 and 10	9/1/2001
MR 1-2	4.84		Replanted PLL 97	748	5/2.5 and 10	10/1/2001
MR 6-1	4.48		Replanted PLL 97	1134	5/2.5 and 10	8/1/2000
MR Soft	2.03		Replanted PLL 97	296	5/2.5 and 10	2/1/2001
SI 1-2	10.38		Replanted PLL 97	1140	5/2.5 and 10	12/1/2002
SI 1-1	4.08		Replanted PLL 97 and 99	892	5/2.5 and 10	2/1/2003
MR Soft 2	2.62		Replanted PLL 98	251	5/2.5 and 10	2/1/2001
AC 1	9.78		Replanted PLL 98 and 00	600	5/2.5 and 10	5/2/2002
GI 1-1	16.9		Replanted PLL 98 and 00	2363	5/2.5 and 10	7/1/2000
MR 3	7.54		Replanted PLL 99-00	874	5/2.5 and 10	2/1/2001
MR 7-2	10.07		Replanted PLL 99-00	866	5/2.5 and 10	5/1/2003
MR 8-1	9.95		Replanted PLL 99-00	1156	5/2.5 and 10	9/1/2001
EB 2-3 Cont	0.24		WRAC Control			
MR Wet Stor	0.04		WS			
Total	485.48			28788		
Summary Active areas						
	Acres			# lines		
	0.31		Clam rafts			
	0.04		FLUPSY			
	55.94		Kumo Bed	7812		
	4.81		Nursery			
	11.23		Rack and Bag			
	182.14		Replanted PLL	20976		
	0.04		Wet Storage Floats			
	0.24		Control Site			
Subtotal	254.75			28788		
Summary Inactive areas						
	124.26		Cleaned of Ready for replant Proposed PLL			
	106.47		Removed from production			
Subtotal	230.73					
Total	485.48			28788		

AC=Arcata Channel, EB=East Bay, MR= Mad River, SI= Sand ISland, BI=Bird Island, GI =Gunther Island,PLL=Pacific Long Line, Kumo=Kumamoto Oysters

1/30/2007

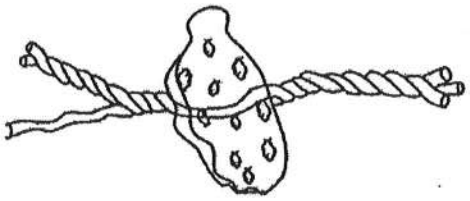


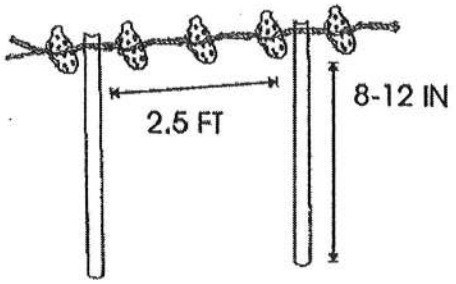
03589.03 001 PCSGA (07/22/2004)

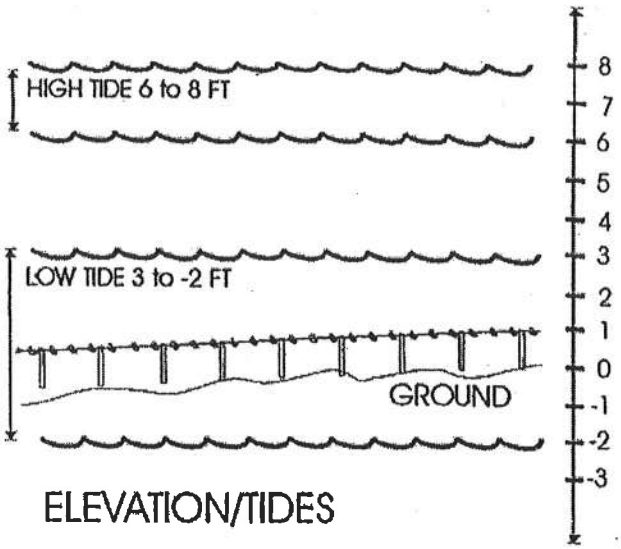
Figure 2
Vicinity Map with Bathymetry

Drawing 1.

Pacific Long Line Culture

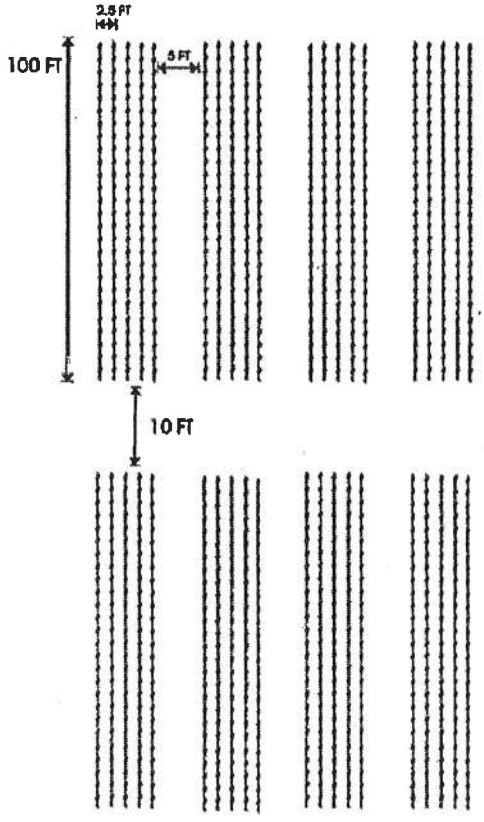






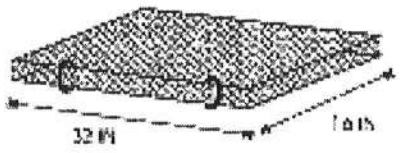
ELEVATION/TIDES

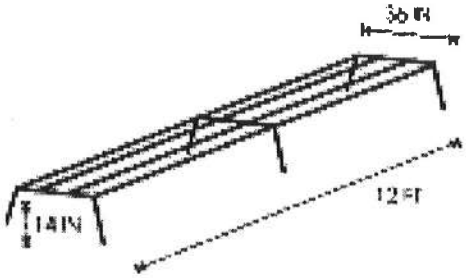
TYPICAL BED

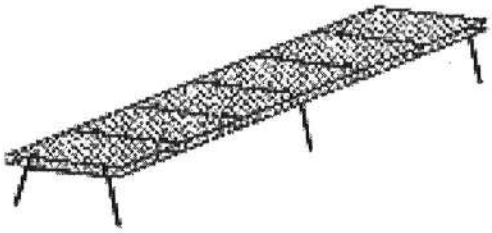


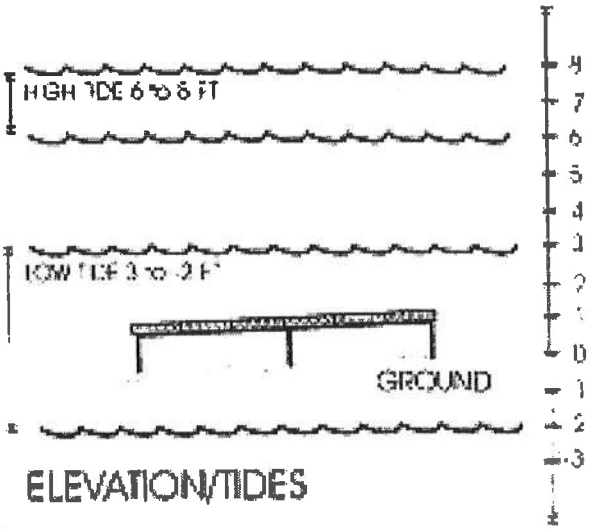
Drawing 2.

Rack and Bag Culture

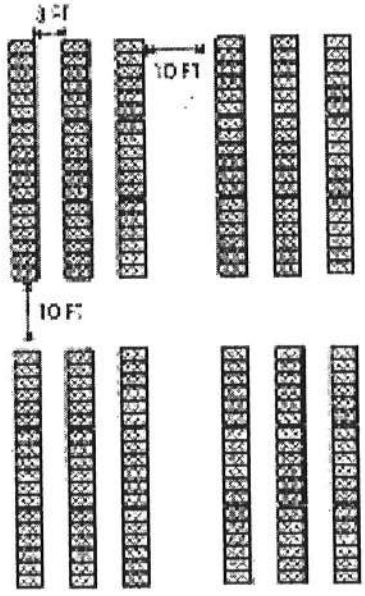




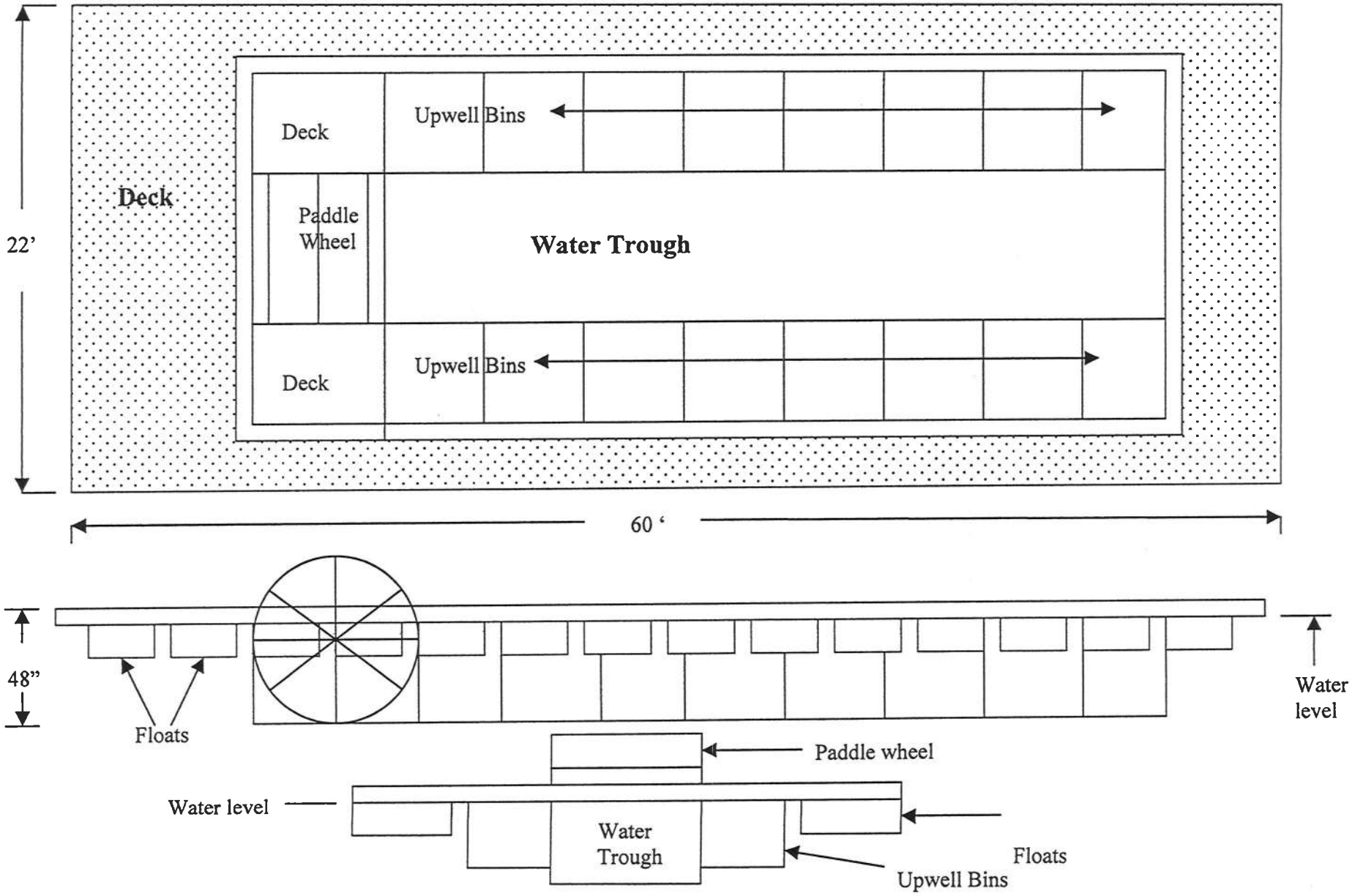




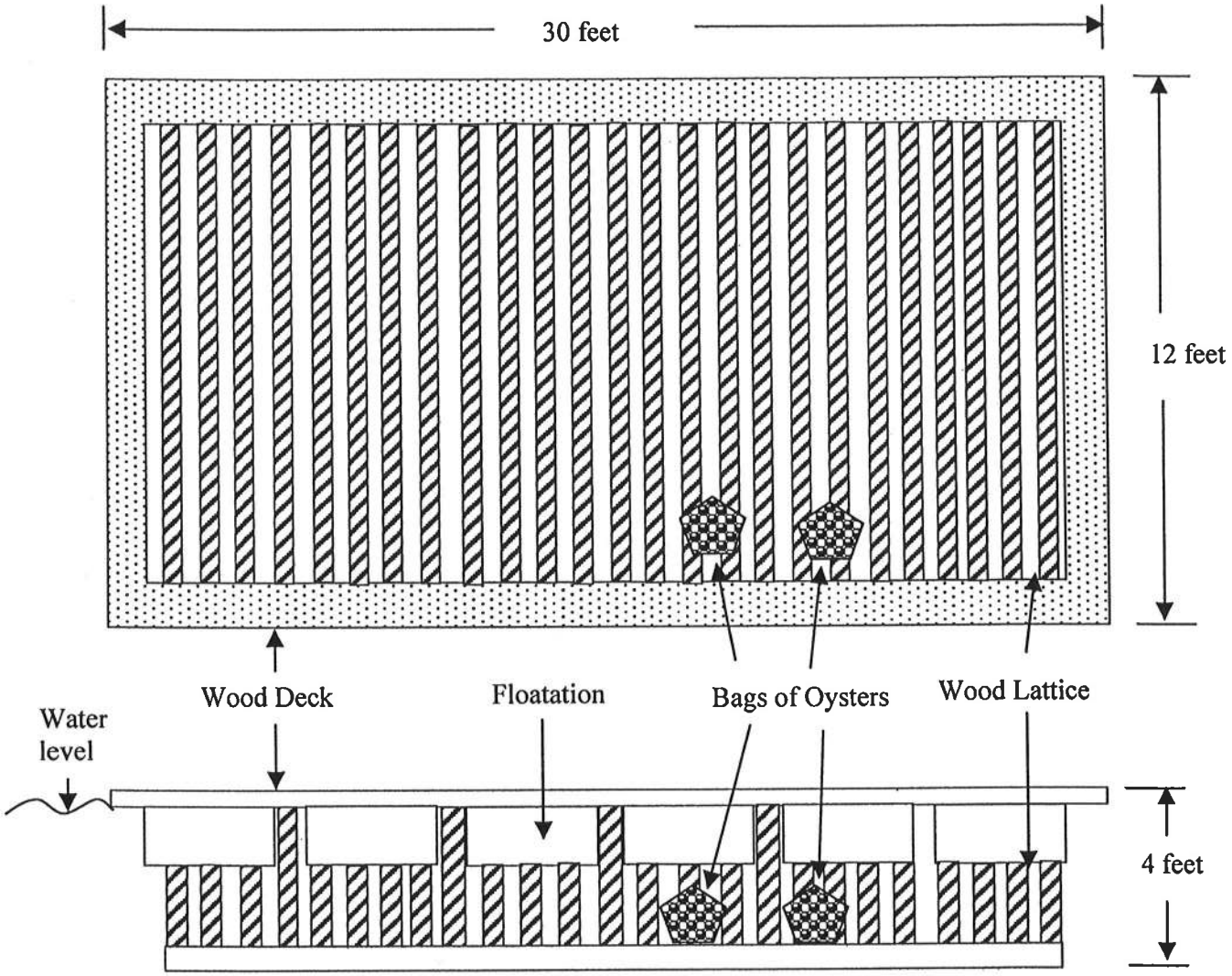
TYPICAL PLOT



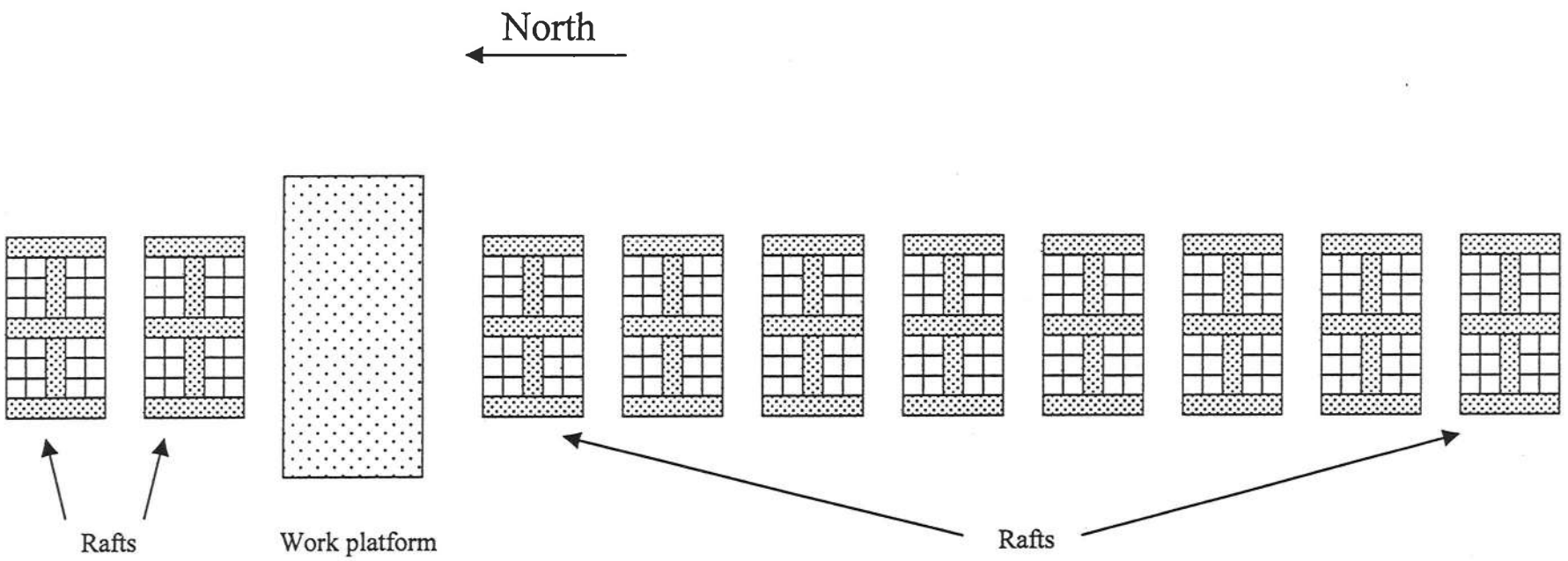
Coast Seafoods Company
Drawing 3. Flupsy – Floating Upwell System
5 December 2001

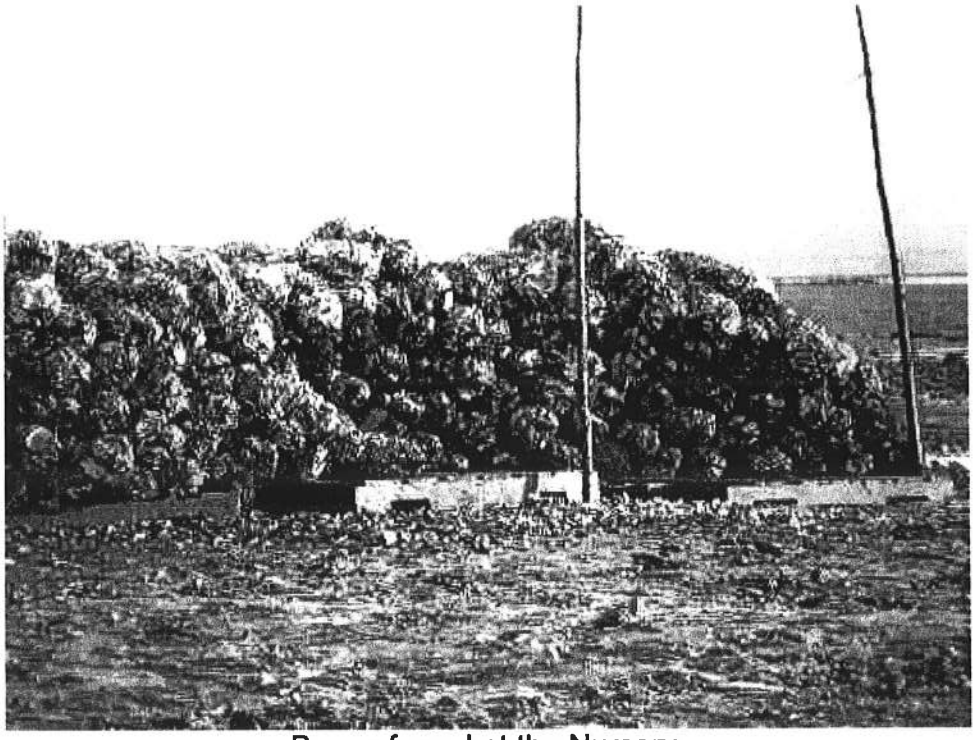


Coast Seafoods Company
Drawing 4. Oyster Wet Storage Sink Float Drawings
20 July 2004



Coast Seafoods Company
Drawing 5. Clam Raft anchoring diagram
5 December 2001





Bags of seed at the Nursery.

Eelgrass bordering a tidal channel.

Jones & Stokes

February 17, 2005

Mr. Greg Dale
California Operations Manager
Coast Seafoods Company
25 Waterfront Drive
Eureka, CA 95501

SUBJECT: Clarification and Additional Scientific Information for Coast Seafoods Continued Oyster Aquaculture Operations

The purpose of this letter is to provide NOAA Fisheries with clarification on the proposed action and additional relevant scientific information on the area of oyster culture referred to in the Biological Assessment as "the remaining 45.49 acres of the total 300 acre operational footprint..."

1. Description of remaining 45 acres

First, we would like to clarify the characterization of the remaining 45 acres, which is inaccurately described in NOAA Fisheries' letter of January 27, 2005 to the U.S. Army Corps of Engineers (Corps). The Corps' letter requesting initiation of consultation (December 16, 2004) correctly characterized the remaining 45 acre as follows: "[Coast Seafoods] Coast proposes to complete conversion of an additional 45 acres of its mariculture operations in Humboldt Bay." All of the areas in question have been under oyster cultivation (ground culture) for numerous years, and the proposed action entails the *completion of the conversion* from ground culture to off bottom (long line) and is within the original footprint of Coast's operations. In fact, the proposed action represents a reduction in the overall footprint of Coast's operations from 500+ acres to 300 acres[1]. NOAA Fisheries characterization of this action as "future expanded operations" is therefore incorrect.

2. Modified longline spacing and location

Second, ongoing discussions with NOAA Fisheries and California Department of Fish and Game (CDFG) have resulted in a proposed approach, with respect to long line bed location and line spacing. Initial discussions (Conference call December 3, 2004 and meeting December 15, 2004) reviewed the 125 acres of Coast's historic ground culture beds currently available for long line planting to determine which beds could be chosen that, in the opinion of the resource agency

[1] As further discussed in this letter, the 300-acre footprint may increase based on the resolution of discussions regarding location and spacing for the remaining 45 acres to be converted from ground culture to long line culture.

personnel, would avoid the most robust or otherwise important eelgrass areas (i.e. used for herring spawning, closest proximity to creek bearing salmonids). The following beds were identified as the most suitable for long line planting:

Table 1: Coast Seafood Beds Available for Conversion

Bed Location					
East Bay (EB)		**Sand Island (SI)**		**Mad River (MR)**	
EB 7-1	9.86	SI 3-1	6	MR 2	6.78
EB 7-2	11.67	SI 3-2	7.33	MR 8-2	6.9
EB 8	5.24	SI 4-1	5.49	MR 9	7.02
Total East Bay	**26.77**	**Total Sand Island**	**18.82**	MR 10	7.88
				Total Mad River	**28.37**
Total All Beds	**73.96**				

The discussions with the NOAA Fisheries and CDFG also addressed a proposed long line spacing schema to avoid and minimize impacts to eelgrass. Because of Coast's unique situation of having available (owned or leased) a large amount of tidelands, an innovative approach to line spacing has been discussed. Under this approach lines would be spaced in a pattern with two lines spaced 1.5-feet apart followed by a 10-foot spacing, followed by an additional two lines spaced 1.5-feet apart, etc. (10/1.5/10-foot spacing). The intent of this line spacing is to avoid/minimize impacts to eelgrass, to minimize overall oyster culture footprint[2], while at the same time maintaining oyster yield[3]. The increased spacing would require approximately 74 acres to be planted to ensure a similar yield as the originally proposed 45 acres at 2.5-foot spacing.

This modified spacing schema is intended to address NOAA Fisheries' concerns over potential impacts to eelgrass from the conversion of the remaining acreage from bottom culture to long line. The recently completed Western Regional Aquaculture Center (WRAC) study compared long line oyster culture utilizing various spacing (1.5-foot, 2.5-foot, 5-foot, and 10-foot) to a control (no-line). This study indicated that 1.5 and 2.5-foot spacing resulted in a reduction in eelgrass density (turions/meter^2) and percent cover. The study concluded that "Eelgrass metrics within the OLN-10 [10-foot spacing] were nearly identical to those within the adjacent control plot (no oyster line; OLN-CON) and very similar to the spatial cover values measured within the five eelgrass reference sites located throughout Arcata Bay." Furthermore, as presented in the Biological Assessment, data from the WRAC study indicate that percent cover and density increased over the course of the study for the 5 and 10-foot spaced lines, while the control plots exhibited a decrease in these parameters for the same time period. These data represent an increase in eelgrass density and percent cover for 5 and 10-foot spaced lines as compared to control (no lines).

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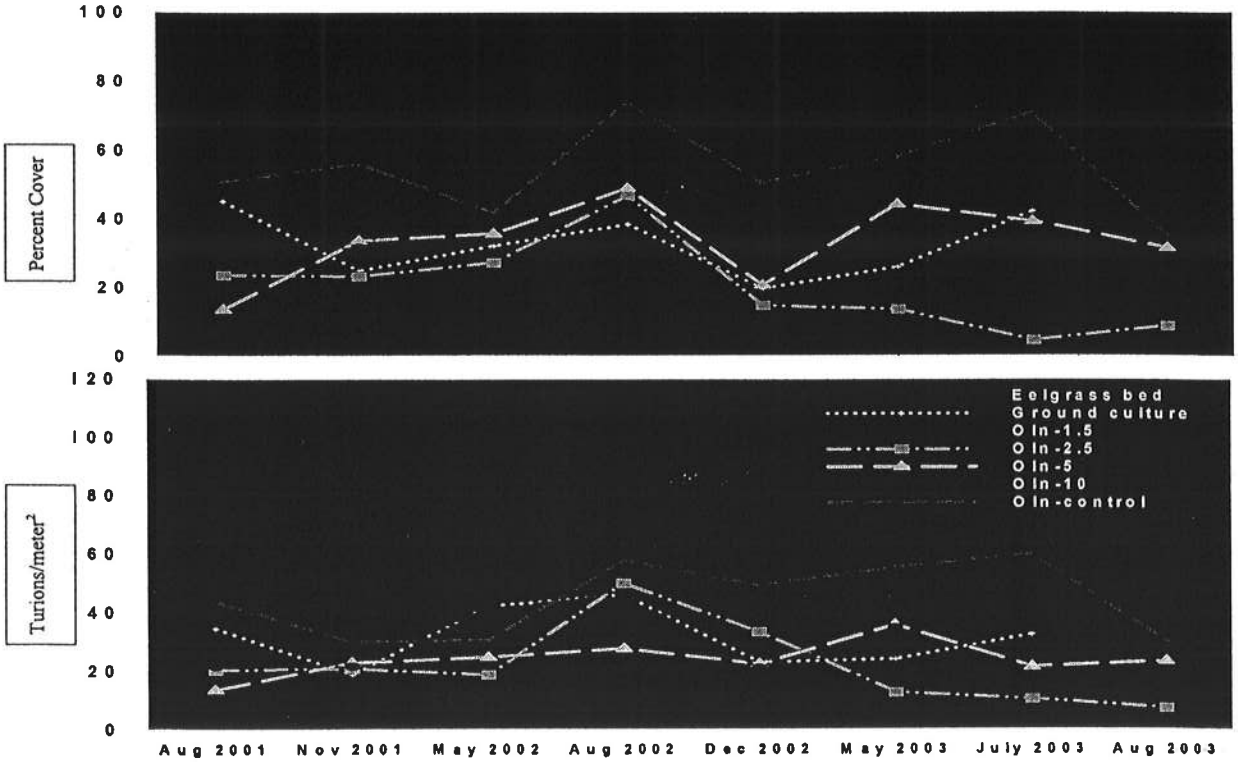
[2] The remaining 45 acres for conversion was proposed at a line spacing of 2.5-feet. In order to achieve approximately the same yield of oysters with the wider spacing, additional acreage would be required.

[3] Observations have indicated reduced oyster production on long line plots with singles lines spaced 10 feet apart, this productivity reduction has not been observed with two lines close together followed by the 10-foot spacing.

Table 2: Results of the WRAC study as presented in the Biological Assessment.

Plot Type	Eelgrass Cover in August, 1 month before oyster culture began (percent)	Eelgrass Cover in Aug, 21 months after oyster culture began (percent)	Decrease (-) or Increase (+)	Eelgrass Density in August, 1 month before oyster culture began (shoots/m^2)	Eelgrass Density in July, 21 months after oyster culture began (shoots/m^2)	Decrease (-) or Increase (+)
Uncultured dense eelgrass	90%	70%[1]	**20 (-)**	75	50[1]	**25 (-)**
Bottom culture on existing bottom culture site.	45%	40%[1]	**5 (-)**	35	30[1]	**5 (-)**
Control –no lines	50%	35%	**15 (-)**	45	30	**15 (-)**
1.5-ft spacing long line on former bottom culture site.	30%	5%	**25 (-)**	25	5	**20 (-)**
2.5-ft spacing long line on former bottom culture site.	25%	10%	**15 (-)**	20	10	**10 (-)**
5-ft spacing long line on former bottom culture site.	15%	35%	**20 (+)**	15	20	**5 (+)**
10-ft spacing long line on former bottom culture site.	30%	65%	**35 (+)**	20	30	**10 (+)**

Figure 1: Results of the WRAC Study (Rumrill 2004)



The Biological Assessment presents the results of numerous studies establishing the value of shellfish habitat and oyster culture (both long line and bottom culture) in terms of its beneficial role in water quality/clarity, physical processes, and nursery and refugia habitat for juvenile fishes, shrimps, crabs, and other invertebrates (Ambrose and Anderson, 1990; Doty, Armstrong, and Dumbauld, 1990; Breitburg and Miller, 1998; Dumbauld, Armstrong and McDonald, 1993; Eggleston and Armstrong, 1995; Simenstad and Fresh, 1995; and Dumbauld, 1997). The Biological Assessment discusses the abundance and diversty of nekton (fish, crab, and shrimp), epibenthic meiofauna, and benthic macrofauna found in oyster culture (see Section 5.1.1.4 Biological Condition: Prey Base and Benthic Faunal Communities of the Biological Assessment). Study results are presented that indicate species abundance and diversity are comparable in oyster and eelgrass habitats, both of which are higher than mudflat, sand and several other habitats sampled (Hosack, 2003; Ferraro and Cole, 2001; Ferraro and Cole, 2003).

The analysis in the BA is further supported by a recent study published in *The Journal of Shellfish Research* (Dealteris et al., 2004; attached). The study investigated the habitat value of shellfish aquaculture gear in comparison to eelgrass and non-vegetated areas. Abundance of marine organisms and species diversity was used to compare habitat value. The study indicated that aquaculture gear provides habitat for many species throughout the year in contrast to the seasonal nature of eelgrass and that species abundance and richness was higher during all times of the year; while species diversity was also higher but not significantly so in aquaculture gear as compared to eelgrass. Habitat value for both aquaculture gear and eelgrass were significantly higher than non-vegetated areas. The study concluded, "shellfish aquaculture gear has substantially greater habitat value than a shallow nonvegetated seabed, and has habitat value at least equal to and possibly superior to submerged aquatic vegetation."

The WRAC study (2004) similarly found that the "overall similarity of the invertebrate communities among the oyster long line and eelgrass reference sites provides evidence that oyster long line culture activities are not particularly stressful to the benthic infaunal communities of Arcata Bay" and that "there were only negligible changes in the overall composition of invertebrate communities." However this study indicated that the highest invertebrate biomass was found in the experimental oyster long-line sites and that more species were present in eelgrass and oyster habitat than in open mud. While it may be difficult to differentiate the value of oyster habitat in comparison to eelgrass habitat, there is substantial evidence that both eelgrass and oyster areas have higher habitat value (species abundance and diversity) than mudflats or sand. Escapa et.al. (2004) found that most epifaunal organisms had higher densities inside oyster beds compared with areas outside of the beds. This study also found that numerous species of birds were found at higher densities within the oyster beds. These scientific studies, along with those previously cited in the BA, indicate that, even if some amount of eelgrass is displaced by Coast's longlines at the proposed spacing, the habitat value of that eelgrass is at least replaced by the habitat value of Coast's longlines, resulting in no net loss of habitat or loss of managed species. Furthermore, it is important to note that in the context of Coast's operations, much of the oyster aquaculture subject to the current permit application is occurring or proposed in areas that are currently nonvegetated. The scientific evidence (described above and in the Biological Assessment) fully supports a finding that oyster culture in these nonvegetated areas produces a substantial increase in habitat value. As such, the overall effect of Coast's proposal, based on these studies, is an increase in habitat for managed and listed species.

In the evaluation of potential impacts to biological resources, it is also important to consider impacts at a variety of scales from local (<1 to 10s of meters) to landscape (100 to 1000s of meters) and even larger scales (embayments and estuaries). The regulatory (ESA and MSA) context of the proposed action focuses primarily on fish species, including salmonids, coastal pelagic, and groundfish species and the habitats upon which they depend (designated critical habitat and essential fish habitat). The highly mobile nature of the ESA listed and MSA managed species, which routinely move 10s to 1000s of meters and much farther, is significant. When comparing eelgrass areas to other eelgrass areas, studies investigating abundance of faunal assemblages generally indicate the species abundance is positively correlated with the plant canopy and the root-rhizome mat (see literature summary in Orth et al. 1984). These parameters have often been translated by resource mangers into percent cover and shoot density in subsequent mitigation policies (e.g., Southern California Eelgrass Mitigation Policy). However, evaluating change in eelgrass habitat value using only two parameters without consideration of scale or regard to the surrounding environmental context (i.e., abundance or limitation of eelgrass habitat) is narrow and does not follow an ecosystem or watershed approach recommended in regulatory guidance (see Consultation Handbook, "Making Endangered Species Act Determinations of Effect for Individual or Grouped actions at the Watershed Scale," NMFS, 1996; and "The Habitat Approach," NMFS, 1999).

Such a narrow analysis is particularly problematic in the context of the Coast operations. As previously discussed, NOAA Fisheries has expressed concern over potential reduction in eelgrass associated with the long line culture on the remaining acreage proposed for conversion from bottom culture. Data has been presented which substantiates that oyster culture provides habitat value in and of itself. Determining which habitat has higher "value" or attempting to ascribe loss or gain is dependent on each particular species and their many life history stages. To summarily determine that a reduction in eelgrass equates to a "likely to adversely effect" determination is unsupported.

The problems with focusing on percent cover and shoot density is illustrated by discussions presented in Orth et al. (1984), which show that several species of fish are found in higher densities in patchy eelgrass beds versus continuous dense beds of eelgrass. Holt et al. (1983; as reported in Orth et al. 1984) suggests that this is because some species of fish require open feeding areas as well as areas for protection from large predators and that patchy vegetation with a high percentage of edges therefore may support higher densities of some mobile foraging species. Thus, it could be argued that modest displacement of eelgrass resulting in some patchiness may be beneficial for certain species, provided that an abundance of eelgrass was present in the surrounding environment to ensure that none of the other ecological functions provided by eelgrass were reduced.

There are several other issues that should be considered when evaluating the "effects" of potential localized reductions in eelgrass from long lines in the context of Humboldt Bay.

- Humboldt Bay contains some of the most robust and healthy eelgrass beds on the entire West Coast. Although there is ample evidence documenting the dramatic reduction in eelgrass over the last 50 years in the majority of estuaries along the West Coast and elsewhere, this is not the case for Humboldt Bay. In fact, eelgrass beds in Humboldt Bay

are at a historical high, with over 2700 acres in Arcata Bay alone (CDFG 2000). These beds are thriving despite (or perhaps partially as a result of) ongoing oyster culture operations over that same time period.

- Interannual variability exhibited in eelgrass coverage in Humboldt Bay is dramatic. Eelgrass coverage was 840 acres in 1959 (Keller 1963), 1,220 acres in 1961, 1,975 acres in 1962, 900 acres in 1963 (Waddell 1964), 1,075 acres in 1972 (Harding and Butler 1979), 1,000 acres in 1979 (Shapiro and Associates 1980), and 1,011 acres in 1992 (Ecoscan 1992). Surveys completed by CDFG in 1997 and 2000 indicate 1,048 ha (2,589 ac) and 1,105 ha (2,730 ac) respectively. These estimates represent an average eelgrass cover of 1,378 acres with a standard deviation of 776 acres, with no discernible long-term trend. The large changes in eelgrass coverage, which naturally occur from year to year, are important when considering the thresholds for ecological relevance to listed and managed species. It is also important to consider this natural variability when determining what amount of change rises above the threshold of "insignificant and discountable."

- Eelgrass exhibits large seasonal variability, with larger areas of coverage, greater shoot density, and higher biomass occurring in the spring and summer as compared to winter and fall. Oyster culture and its habitat value are present year-round. Oyster culture habitat is eliminated or reduced during harvest and initial planting respectively, however this change in habitat value occurs at a frequency between 18 and 36 months in comparison to every 6 months for eelgrass[4]. The combination of the two habitats is complimentary in that one or the other habitat is likely to be present in the Bay during any given time of the year.

Oyster culture provides a diversity of habitats (i.e., hard substrate, three-dimensional biological structure) for Humboldt Bay. As discussed above, and presented in the Biological Assessment and attached study, oyster culture provides a myriad of beneficial habitat value to Humboldt Bay. Furthermore, the presence of both eelgrass and oyster culture in a patchy structure throughout Arcata Bay provide robust heterogeneous habitats both spatially and temporally. This increased habitat diversity makes the entire system more resilient to disturbance from both natural and anthropogenic causes. The discussion should not be focusing on which habitat is "better" or more "valuable" but should be striving to maximize the benefits that each of the unique habitat types can provide the listed and managed species.

Sincerely,

Chris Cziesla
Jones & Stokes

[4] It should also be noted that during oyster harvest all of the attached biological community associated with the oyster culture is removed from the system, unlike eelgrass and its attached community which is primarily displaced during fall storm events and decomposes over time. However, much of this detritus from eelgrass is exported from the Bay through tidal exchange.

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Jones & Stokes

Technical Memorandum

Date: November 8, 2006

To: Humboldt Bay Harbor, Recreation and Conservation District

From: Chris Cziesla, Jones & Stokes

cc: Coast Seafoods

Subject: Coast Historic Bottom Culture Operations

I. Introduction

The purpose of this technical memorandum is to address the environmental effects of Coast's proposed operations on eelgrass as compared to the baseline eelgrass conditions at the time Coast first applied for Harbor District approval in 1998. In order to do so, it is necessary to discuss the differences between Coast's operations in the 1998, when Coast applied for its initial Harbor District permit, and its proposed operations under review in its current Harbor District permit application. In addition, this technical memorandum discusses the differences between Coast's baseline bottom culture operations and the bottom culture operations on bed MR 7-1, which were reviewed as part of the Western Regional Aquaculture Center ("WRAC") study in Humboldt Bay.

II. Factual Information

A. Coast Seafoods' Historic Oyster Ground Culture Operations

During the 1990's, Coast Seafoods farmed roughly 500-600 acres annually. Generally Coast farmed the same beds, although Coast occasionally tried new areas or left old areas fallow. General bed sizes varied from crop to crop depending on seed availability and other factors (such as climate and predation). In 1998, Coast had roughly 330 acres of ground culture in production, 95 acres of long-line culture and 11 acres of rack and bag culture.

For ground culture operations, Coast placed approximately 40,000 bags of over winter seed on its nursery from August to March of a given year, and another 20-30,000 bags of spring production seed on the nursery from February to May for hardening (growing to 3mm size prior to planting on beds). Hardened seed was then planted on beds at a

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density of roughly 700-1000 gallons per acre, with an average density of approximately 750 gal/acre. Each bag of seed totals approximately 2.1 gallons and contains approximately 250 shells with seed attached.

With its ground culture operations, Coast prepared beds by dredging the bed clean of the previous crop with either a drag dredge or a hydraulic dredge (or both), harrowing the bed (dragging a toothed plow) and placing crab pots around the bed at roughly 30-foot intervals. The bed was then allowed to sit for several days to accumulate crabs in the traps and allow the bottom to smooth over from harrowing. Bat ray exclusionary fencing was also constructed around most ground culture beds. Bat ray fencing consisted of 8-foot wooden stakes placed in the mud every 8 inches to form a continuous row or fence. The corners of the bat ray fencing included traps that allowed rays to be caught and removed. Bat ray fences were installed or repaired prior to planting.

During the spring and summer, the seed bags were cut and loaded onto a scow by hand at low tide. This involved bringing a scow onto the nursery, placing the seed bags onto the scow and cutting the bags open. At high tide the scow was towed to the previously prepared beds to be planted by shoveling the seed off by hand in a dispersive manner.

The seed was grown on the beds for approximately 18 months. During this time the beds were frequently crabbed and harrowed as needed to keep oysters on top of the mud. Depending on the location of the bed in the bay, beds were harrowed between 3 and 5 times per year. In addition, if growth was slow or excessive siltation occurred, Coast occasionally transplanted the seed by dredging it and moving it to another bed. If the seed grew too thick it was hand-scattered. Hand-scattering involved a crew of farmers spreading oysters by hand from thick areas to thin areas in order to even out density. Each ground culture crop cycle required 3 years on average.

When ground culture beds were ready to be harvested, Coast used one of three harvest methods: mechanical dredge, hydraulic harvesting and harvesting by hand. Coast initially operated a mechanical dredge that was very similar to scallop, oyster and clam dredges used around the world. The leading edge of the dredge consisted of a steel frame with teeth. A collection bag was attached to the steel frame. The dredge was towed across the surface of the bottom allowing shellfish to be lifted from the substrate by the steel teeth and guided into the bag. The bag was lifted periodically onto the boat deck, emptied and then redeployed.

By the 1990's, most of Coast's bottom culture beds were harvested using a hydraulic harvester. The hydraulic harvester contained a generator, operating controls, and hydraulic apparatus mounted on a floating barge or platform that was towed through the water. The hydraulic apparatus contained a conveyor belt system and arm with "stinger" and rollers extending below the water surface to the sediment. The hydraulic harvester was used to harvest large quantities of oysters with a crew of two people and harvested mostly the larger size oysters. Smaller oysters and oysters less than three years old, as well as residual shells, were screened out mechanically and returned to the bay bottom.

In good weather conditions, the hydraulic harvester could harvest 1/2 acre per day on average.

B. Current Operations

Coast's current operations primarily consist of long-line culture. For long-line culture, Coast places about 17,000-19,000 bags of long-line seed on the nursery for hardening. Once hardened, Coast plants the seed by placing the seeded long-line on notched PVC stakes that are arranged in rows on the mudflats. The long-lines are strung through notches on top of the PVC stakes, suspending the oyster seed approximately 1 foot above the bay bottom.

Long-line spacing varies from bed to bed but most beds have five long lines spaced 2.5 feet apart, with a ten-foot space between each group of five lines. Some beds have long lines spaced two and one half feet apart over the entire bed. The proposed action includes the use of long lines at 2.5 foot spacing on all beds with the exception of the multiple spaced beds planted at the request of the MMC or as part of the WRAC study.

A crew of 6 typically plants the long-lines when the tide is low enough to allow the crew to walk on the bed to be planted. On days of sufficiently low tides the planting crew will gather enough bags from the nursery to plant during the low tide. The bags are normally gathered at high tide using a skiff and a hook. The crew will float over the pile of long-line seed and lift the bags into the skiff using the hook. An alternate method of getting the long-line bags is to pull the skiff into the nursery by hand when the tide is coming in but the water is only a foot or two deep and manually throw the bags into the skiff.

Once the seed bags are gathered from the nursery, the crew will take the bags to the bed being planted and place them along the edge of a row of empty long-line pipe. At low tide, the crew will go back out to the bed, cut the long-line out of the bag and pull the line out along side the empty pipe. As crew members walk back to the next bag, they clip the long-line on the notch of each pipe. They continue this until all bags are planted or the tide forces them off the bed. Due to the infrequency of adequately low tides, the planting crew works every low tide that they can.

There is a monthly inspection of each planted bed. Apart from that inspection, virtually no activity takes place on the bed until harvest. A bed inspection involves one or two people walking on the bed at low tide to make sure that the lines are in the notches.

Long-line beds are harvested when they have oysters of a harvestable size and market conditions are right. It usually takes 18 to 36 months for oysters to reach a harvestable size. Market condition is hard to predict, varying with seasons and other factors. Coast currently uses two different methods to harvest long-lines. The first, hand picking, involves placing round 20-bushel tubs on the bed at high tide using an oyster scow. The tubs are then filled at low tide by hand. The picking crew cuts the long-line into manageable single clusters and places them in the picking tub. A floating ball is attached

to each tub, and at high tide an oyster scow is used to pull the tub out of the water. The oysters are dumped on the deck of the scow, and the tub is placed back on the bed to be refilled. The oysters are brought to Coast's Eureka plant to be either broken into singles to be sold live in shell, or loaded onto a truck for shipment to Coast's shucking plant in South Bend, Washington.

The second method of harvest, the long-line harvester, involves positioning a scow over the long-line bed at high tide. Individual lines are then pulled onto the floating scow either by hand or by a hydraulically-operated roller. If the lines are pulled by hand then the lines need to be cut into individual clusters, usually at the plant. If the lines are pulled mechanically they run through a breaker that strips the clusters from the line. The long-line harvester does not come in contact with the bottom while harvesting long-lines.

III. Studies Evaluating the Impacts of Bottom Culture and Long-line Culture on Eelgrass

A. Historic Abundance of Eelgrass

Interannual variability exhibited in eelgrass coverage in Humboldt Bay is dramatic. Eelgrass coverage was 840 acres in 1959 (Keller 1963), 1,220 acres in 1961, 1,975 acres in 1962, 900 acres in 1963 (Waddell 1964), 1,075 acres in 1972 (Harding and Butler 1979), 1,000 acres in 1979 (Shapiro and Associates 1980), and 1,011 acres in 1992 (Ecoscan 1992). Surveys completed by CDFG in 1997 and 2000 indicate eelgrass coverage of 1,048 ha (2,589 ac) and 1,105 ha (2,730 ac) respectively. These estimates represent an average eelgrass cover of 1,378 acres with a standard deviation of 776 acres, with no discernible long-term trend. There are no estimates of eelgrass cover in Arcata Bay prior to the start of oyster culture in the 1950's, or prior to the many other potential impacts on eelgrass dating back to the 19th Century, including diking, sedimentation due to upstream timber harvest, and chemical/biological contamination.

There have been several studies that have included some level of interpretation or investigation regarding the relationship between oyster culture and eelgrass. Historically, virtually all oyster culture operations consisted of bottom culture techniques with either hand or mechanical harvesting. In Humboldt Bay, Waddell (1964) documented the impacts of harvesting oysters from eelgrass beds by hydraulic dredges and a modified dragline-type dredge. Under conditions of no dredging, eelgrass biomass declined 38 percent (this may have been due to a combination of impacts to Humboldt Bay from logging sediment, agricultural impacts on water quality, residential construction and storm water runoff, heavy rainstorm sediment input, and others) while biomass declined 96 percent after three dredging episodes. In some cases, the eelgrass failed to recover following dredging activities. This data indicates a significant decline in eelgrass from oyster harvesting using an oyster dredge as well as potential longer lasting effects on eelgrass recovery.

Other studies also suggested impacts to eelgrass from oyster culture farming practices (Carlton et al. 1991, Pregnall 1993, Everett et al. 1995, Rumrill and Christy 1996); however, because these studies evaluated culture methods not historically (or currently) employed by Coast Seafoods (such as stake and rack culture) they are not discussed further.

B. Western Regional Aquaculture Center Study

More recently the Western Regional Aquaculture Center (WRAC 2005) completed several studies evaluating the relationships between oyster culture and eelgrass. One of the express project objectives was to assess the immediate and longer-term response of eelgrass to aquaculture practices, including bottom culture (planting, harvest dredging, hand harvesting) and long-line operations (planting and harvesting). The experiments were conducted in both Willapa Bay, Washington and Humboldt Bay, California. The WRAC examination of the effect of oyster aquaculture on eelgrass included two components 1) A survey of existing oyster aquaculture areas in Willapa Bay, Washington where grow-out and harvesting practices are fairly diverse and 2) an experimental approach in both Willapa Bay and Humboldt Bay to examine individual practices and their effect on eelgrass growth and survival over time.

The WRAC study reported the following from surveys of the distribution and growth of eelgrass within and adjacent to oyster culture:

> Eelgrass density showed variability between sites and culture type, but all cultured areas had lower density and cover than uncultured meadow areas (Figure 1).

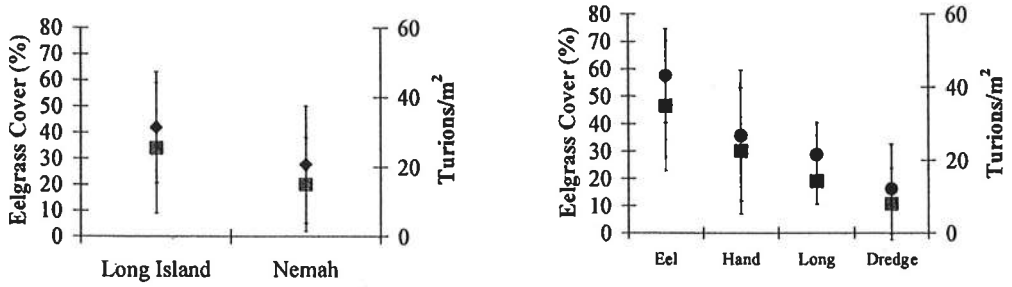

Figure 1. Eelgrass density in May 2004 varied among sites (a) and oyster culture types (b). All cultured areas (Hand-picked, Long lines, Dredged) had lower eelgrass density than uncultured areas (Eel).

> Harvest dredged sites had the lowest eelgrass density with approximately one third of the eelgrass cover seen in uncultured areas. Individual plant growth rates (g/plant/day) and size corrected growth rates were lower in all cultured areas than in eelgrass meadows (Figure 2). Eelgrass in long line beds showed the slowest growth, but when density and growth rates are combined to give a measurement of aerial productivity, harvest dredged beds had the lowest overall eelgrass production.

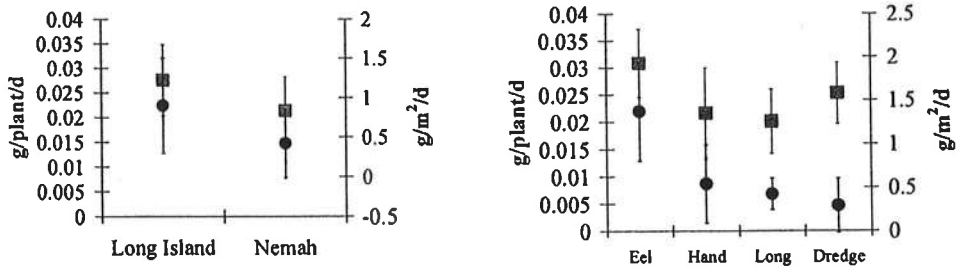

Figure 2. Eelgrass growth varied among sites (a) and oyster culture types (b). Individual plant growth rates (g/plant/d) were lowest in long line culture, while aerial productivity (a combination of density and growth measures, g/m²/d) was lowest in dredged culture.

C. Humboldt Bay Long-Line Experiments

As part of the WRAC study to understand the potential ecological effects of off-bottom (long line) culture, experimental long line plots were established at line spacing distances of 1.5 ft., 2.5 ft., 5 ft., and 10 ft. Additionally, an adjacent control plot (no long lines), an oyster ground culture plot, and six eelgrass reference plots (no recent history of oyster culture) were included. Prior to establishment of the experimental long line plots, the spatial cover of eelgrass ranged from 14 to 51 percent and eelgrass density ranged from 15 turions/m^2 to 46 turions/m^2. Initial spatial cover and density was 91 percent and 76 turions /m^2 within the eelgrass reference sites and 45 percent and 38 turions/m^2 with the ground culture plot.

Over the course of the 2 year study, eelgrass spatial cover and density exhibited a seasonal pattern and response that was directly related to the density of oysters in the experimental long line study plots with a trend of decreased spatial cover and density with decreased distance between suspended oyster long lines (Figure 3). Eelgrass metrics within the oyster ground culture plot (MR 7-1)[1] were intermediate and similar to the 5 ft spaced long line culture plot.

[1] Additional information on the ground culture plot used in the WRAC study (bed MR 7-1) is included in the section entitle Ground Culture Plot MR 7-1 below.

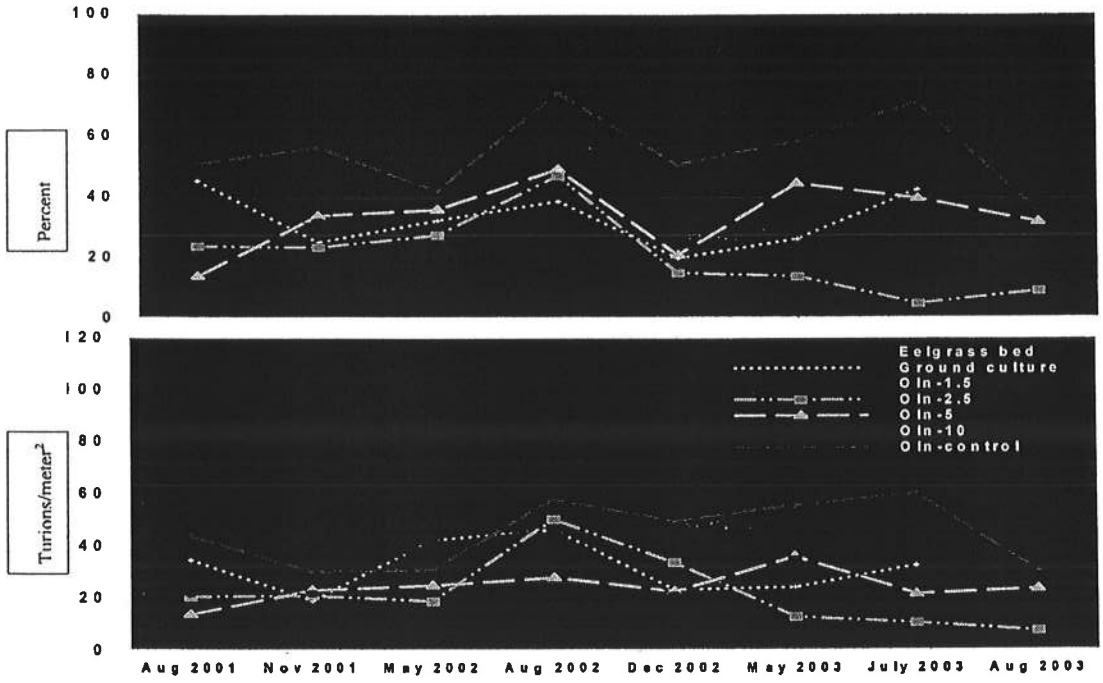

Figure 3. Humboldt Bay WRAC Study Results (Rumrill 2004).

D. WRAC Study Conclusions

WRAC study results indicated complicated interactions between different shellfish farming techniques and the response of other commercially and ecologically important species. Specifically in their final report the researchers concluded "that there is substantial spatial and temporal variability in oyster growing practices and eelgrass density, growth, and survival. This variability must be taken into account when evaluating and comparing the effects of shellfish aquaculture. Nonetheless, we were able to show a consistent trend in the effects of harvest practices with reduced eelgrass density in all areas where oysters were cultivated and approximately two thirds lower density observed in areas where a harvest dredge implement had been used versus that found in nearby eelgrass meadows. Beds where oysters were picked by hand and where long-line culture was used had intermediate densities and cover."

IV. Ground Culture Plot MR 7-1

The Humboldt Bay WRAC study included a ground culture plot (MR 7-1) to provide some information regarding the effects of ground culture on eelgrass. (The vast majority of the WRAC study analysis of bottom culture effects was based on beds in Willapa Bay.) The study indicated that eelgrass metrics within the ground culture plot were similar to those observed in the 5 foot spaced oyster long lines. The discussion below

compares and contrasts the oyster ground culture practices on MR 7-1 during the WRAC study to the historic ground culture practices used by Coast Seafoods in 1998 (baseline).

By the onset of the WRAC study, Coast had virtually ceased all of its ground culture operations. Bed MR 7-1 was one of the last ground culture plots remaining, and it had recently been hand-harvested. Upon its inclusion into the WRAC study, bed MR 7-1 was planted with the remaining seed from the nursery. This was approximately 5,475 gallons of seed distributed over the 10.46-acre bed, resulting in a density of approximately 523 gallons per acre. That density is slightly more than half of the typical density of ground culture planting historically used by Coast Seafoods.

As also noted above, prior to its planting for the WRAC study, MR 7-1 was most recently harvested by hand instead of by hydraulic harvester. Bed MR 7-1 was not dredged or harrowed prior to the WRAC study planting, as was done with Coast's commercial ground culture beds. Nor were any crab pots or significant bat ray exclusion[2] placed around the study bed. Observations by Coast personnel indicated that during the first year of the study, oyster predation on MR 7-1 was significant, resulting in a loss of 80-90% of the planted oysters. The analysis of bed MR 7-1 does not show any of the effects of harvesting ground culture beds because the oysters were not harvested prior to completion of the WRAC study.

Based on the substantial operational differences in how the MR 7-1 ground culture study plot was cultivated during the WRAC study, eelgrass growth on that plot is not representative of ground culture as it historically occurred on Coast Seafoods ground culture beds. As indicated by previous studies (Waddell 1964, Griffin 1999) and the WRAC experiments in Willapa Bay (WRAC 2005), higher oyster density in, and mechanical harvesting of, ground culture beds can result in significant reductions in eelgrass. The eelgrass disruption over the dredged harvested beds in Willapa was greater than on beds with commercially spaced long-lines. The results from the WRAC Humboldt Bay ground culture plot (MR 7-1), which was planted, maintained and harvested in a manner that was not representative of Coast's baseline operations or commercial bottom culture operations in general, are not particularly useful to determining the environmental effects of Coast's proposal.

To summarize: eelgrass density at MR 7-1 was greater at planting than eelgrass density at planting under baseline conditions. Conversely, oyster density at MR 7-1 was significantly lower than on bottom culture beds that constitute baseline conditions. Furthermore, unlike baseline bottom culture conditions, no predator control activities took place on MR 7-1. Additionally, MR 7-1 was not harvested during the study, so the study did not evaluate the effects of dredging on this bed. For these reasons, operations at MR 7-1 are not representative of baseline operations. Similarly, eelgrass abundance

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[2] A limited amount of bat ray stakes were relocated to bed MR 7-1 from other beds; however, these stakes were at the end of their useful life and no additional stakes were added, rendering the bat ray fencing ineffective.

and density at MR 7-1 are not representative of eelgrass abundance and density under baseline conditions.

V. Conclusions

Operational practices employed by Coast Seafoods have substantially changed from the historic operations at the time of the permit applications in 1996 (baseline). These changes have included:

- a reduction in operational footprint from over 500 acres to 300 acres;
- the conversion from bottom culture to off-bottom culture (long lines);
- the cessation of harrowing and dredging;
- the cessation of bat ray and crab depredation;
- the cessation of discharging shell into intertidal areas to harden the substrate; and
- the transition to beds that are at or near the upper elevation of eelgrass to avoid negative interactions.

All of these changes have reduced the environmental impacts of Coast's operations to Humboldt Bay in general, and eelgrass in particular. The factual information and studies cited herein support a conclusion that Coast Seafoods proposed operations represent a reduction in impacts compared to baseline environmental conditions.

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Notice of Determination

To: X Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

X County Clerk
County of Humboldt

From: Humboldt Bay Harbor District
PO Box 1030
Eureka, CA 95502
(Address)

Subject:
Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Coast Seafoods Continued Mariculture in Humboldt Bay
Project Title

99062069	David Hull	707-443-0801
State Clearinghouse Number (If submitted to Clearinghouse)	Lead Agency Contact Person	Area Code/Telephone/Extension

Humboldt Bay — Humboldt County
Project Location (include county)

Project Description:
Continued Mariculture operations on 300 acres of tidelands within Humboldt Bay.

This is to advise that the Humboldt Bay Harbor District has approved the above described project on
☒ Lead Agency ☐ Responsible Agency

April, 12 2007 and has made the following determinations regarding the above described project:
(Date)

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
5. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the MND with comments and responses and record of project approval is available to the General Public at:
601 Startare Drive Eureka, CA 95501

David Hull — April 13, 2007 — Chief Executive Officer
Signature *Date* *Title*

Date received for filing at OPR:

937114
CAROLYN CRNICH
Humboldt County Clerk
FILED APR 13 2007 FILED
BY J Halvorsen

MITIGATED NEGATIVE DECLARATION

The Humboldt Bay Harbor, Recreation and Conservation District (District), as the lead agency pursuant to the California Environmental Quality Act (CEQA), prepared a Draft Mitigated Negative Declaration (Draft MND) for a proposal by Coast Seafoods for continued mariculture operations in Humboldt Bay (State Clearinghouse Number 99062069). The Draft MND was published for a 30-day public and agency review period pursuant to CEQA and the CEQA Guidelines (particularly Section 15073), which ended 16 March 2007. The Draft MND included an Initial Study for the proposed project, incorporated as a part of the Draft MND. The contents of the Draft MND and Initial Study are incorporated into this Mitigated Negative Declaration by reference, as if fully set forth.

The District received three comments ("letters") during the review period concerning the content of the Draft MND: (1) a letter from the State Lands Commission; (2) a letter from the California Department of Fish and Game; and (3) a letter from the Law Office of Sharon Duggan, representing the Environmental Protection Information Center (EPIC) and Humboldt Baykeeper. The comment letters, together with District responses to the substantial environmental points raised in each letter, are included in Attachment A to this Mitigated Negative Declaration.

Based upon the content of the Draft MND and the Initial Study, considered together with the comments received during the review process, the District finds that the proposed project will not cause significant environmental impacts when implemented together with the mitigation measures identified in the Draft MND, or measures as modified or substituted during further lead agency consideration.

Name of Project:	Coast Seafoods Application for Continued Mariculture Operations in Humboldt Bay, California
Lead Agency Name and Address:	Humboldt Bay Harbor, Recreation and Conservation District P.O. Box 1030 Eureka, CA 95502-1030
Contact Person and Phone Number:	David Hull, Chief Executive Officer (707) 443-0801
State Clearinghouse Number:	99062069 (Prior SCH No. for this project)

Copies of the Initial Study documents, including attachments, the Draft MND, and other information pertinent to this environmental review may be obtained from the District; there may be document-production costs associated with the documents.

Signed: David Hull

Name: David Hull

Title: Chief Executive Officer, HBHRCD

Adopted on: April 12, 2007

Attachment A

Comments and District Responses

Mitigated Negative Declaration

Coast Seafoods Mariculture Operations

The Humboldt Bay Harbor, Recreation and Conservation District ("HBHRCD" or "District"), the lead agency for the California Environmental Quality Act review for the proposed continuation of Coast Seafoods continued mariculture operations in Humboldt Bay (SCH No. 99062069) received three comments regarding the content of the Draft Mitigated Negative Declaration prepared by the District for the proposal: (1) a letter from the State Lands Commission; (2) a letter from the California Department of Fish and Game; and (3) a letter from the Law Office of Sharon Duggan, representing the Environmental Protection Information Center (EPIC) and Humboldt Baykeeper.

Copies of each letter are included in this attachment. Where a comment raised issues that are relevant for the District's consideration, the issue is summarized in the subsections, followed by the District's reasoned responses to the substance of the comment.

1.0 California State Lands Commission

In reviewing this letter the District concluded that it included no individual comments that affected the District's California Environmental Quality Act (CEQA) review, and no responses are necessary.

The letter does include a comment indicating that the State Lands Commission (SLC) will be a necessary participant in the transfer to public ownership of fifty (50) acres to land to a public agency that is identified in the MND as a partial mitigation measure. The District will incorporate into the monitoring plan for the MND a requirement to consult with the SLC early in the land-transfer process in order to identify and address SLC concerns.

2.0 California Department of Fish and Game

The letter from the Department of Fish and Game (CDFG) includes four numbered paragraphs. The paragraphs numbered (in the letter) 2 and 3 provide additional information about specific elements of the Humboldt Bay marine ecosystem, but do not include comments about the MND and require no responses.

2.1 Culturing Debris Not Addressed in MND

Numbered comment number 1 states that "(d)ebris resulting from culture operations on the tidelands, such as plastic mesh bags, PVC pipe, and cable ties, is not addressed in the MND." The comment further suggests that the District should add an additional mitigation measure to the set of mitigation measures to be required of Coast Seafoods, to the effect that "all unused materials and debris, especially plastic, be removed from the tidelands to prevent it from entering the marine environment."

The District observes that the District's 1999 MND included the following mitigation measure:

> "Coast Seafoods shall conduct a 'cleanup' program to remove culturing debris remaining from past mariculture uses, as well as other discarded materials which also occur within the areas used for mariculture, from the areas Coast Seafoods uses in Arcata Bay; the cleanup program in each area identified in the list shall be completed no later than the end of summer in the year 2000."

The District will include the following modification of the prior mitigation measure in approvals issued for Coast Seafoods pursuant to this environmental review:

> **Additional Mitigation Measure: Debris Removal**: *Coast Seafoods shall remove culturing debris remaining from mariculture uses, as well as other discarded materials which occur within the areas used for mariculture, from the areas Coast Seafoods uses in Arcata Bay.*

The District also observes that existing approvals for Coast Seafoods' proposed operations already include existing requirements for debris removal:

- *U.S. Army Corps of Engineers Permit, General Condition No. 2*: This condition requires that Coast maintain its operations "in good condition." Removal of debris should be encompassed in this.
- *Regional Water Quality Control Board Section 401 certification, p. 3*: This provision requires that Coast "conduct a cleanup program to remove culturing debris remaining from past mariculture uses, as well as other discarded materials which also occur within the areas used for mariculture, from the areas applicant uses in Arcata Bay."

Based upon the additional mitigation measure and the existing requirements established within permits without which the applicant may not operate, particularly upon the requirement established by the Regional Water Board, the District concludes that the requirement that the applicant remove culturing debris from areas of Humboldt Bay used for mariculture is fully addressed.

2.2 Limitation to Using 11.5 Acres in East Bay

Numbered comment number 4 suggests that the District add a permit condition limiting Coast to using 11.5 acres of tidelands in East Bay bed EB-2, as a mitigation measure "to protect herring spawning substrate."

The District has concluded that adding such a permit restriction is unnecessary, either for mitigation purposes or Humboldt Bay management concerns. Coast Seafoods has not requested authorization for planting any area with the East Bay region other than bed EB-2, and

consequently any approval issued by the District under the current application would not authorize planting more than the 11.5 acres in bed EB-2. In order to plant any additional area in the East Bay, an additional application to and approval from the District would be required, which would be associated with a subsequent CEQA review process.

The District also observes that the authorization issued for the Coast Seafoods project by the U.S. Army Corps of Engineers includes the following restriction:

> "Of the additional 45.5 (approximately) acres to be converted from bottom to off-bottom oyster culture, no more than 11.5 acres of historic bottom culture oyster beds in the EBMA will be planted with off-bottom culture. In the EBMA, the permittee shall use only plot EB 7-2 for the up to 11.5 acres of additional plantings."

3.0 Law Office of Sharon E. Duggan

3.1 An Environmental Impact Report is Required

This comment, submitted on behalf of the Environmental Protection Information Center (EPIC) and Humboldt Baykeeper, includes a substantial number of individual comment elements that are collectively directed at expressing the opinion that the District should prepare an Environmental Impact Report (EIR) as the appropriate CEQA document for the proposed project. The District understands that the commenter's position is that the MND is incorrectly framed as a continuation of a review process begun by the District at the time Coast Seafoods initially applied to the District for authorization to conduct mariculture operations in Humboldt Bay, and that these comments are intended to bolster the commenter's essential position that an EIR is necessary. The District does not agree that an EIR is a necessary document for the District's review of the proposed project, and the District does not agree that the MND inadequately identifies potential impacts from the proposed project.

It is well for all reviewers to recall that the responsibility for approving mariculture operations in Humboldt Bay was thrust upon the District *de novo* in the mid-1990s. In its first-ever environmental review of the proposed Coast Seafoods permit application, the District clearly stated that the information available to support a thorough CEQA review simply did not exist, and that the District intended to allowed limited mariculture operations, on a series of annual permits, while information was collected that would allow for a more-informed judgement of the proposal's possible effects, and that the subsequent environmental review would be treated as a continuation of the District's initial 1997/8 review.

Because the current MND is the culmination of the review process begun in 1997/8 (pursuant to which no "long-term" authorization has ever been granted to the applicant), the District has concluded that the baseline for the current environmental review is the conditions in effect at the time Coast Seafoods applied to the District for the initial permit.

The Initial Study states, in relevant part:

> "This 2007 Initial Study carries forward the previous CEQA analysis and evaluates potential impacts associated with Coast's proposed operations, as called for in the MND adopted by the District in 1999. The District, in approving the permit 1998-3 and adopting the MND,

did not close the CEQA review process for the original application, and the current review process was specifically identified as the anticipated culmination of the environmental review for Coast's mariculture activities. The District explicitly identified in the MND an intention to use this tiered review to identify possible environmental effects and environmental benefits that the District would incorporate as conditions of approval in authorizing longer-term permits for Coast's mariculture operations. It is therefore important to note, in the context of this assessment, that the "environmental baseline" for impact assessments in this continued CEQA document is the baseline that existed when Coast applied to the District in 1998."

The commenter asserts that the District inappropriately extends the CEQA process from the initial application to include the current assessment period, stating (p. 2) that the 1999 MND "cannot now be used for 'tiering' as the current document indicates, as it was expressly designed and limited to a one-year permit." This comment is inaccurate. The District's approach to the Coast Seafoods project was an adaptive approach that both maintained close District control over the course of applicant actions and required the completion of numerous environmental studies that led to modifications in the proposed project as the studies provided evidence to support such modifications. The District has been consistently clear in stating to interested parties that the CEQA process was not completed with the first one-year approval, and that the District would ultimately review the environment evidence collectively at the culmination of a study process that was spelled out in the initial CEQA review.

The District has concluded, further, that even if the current CEQA review process were not a continuation of the previous review elements, the District would still be justified in concluding that a Mitigated Negative Declaration would be the appropriate CEQA document for the current application. When evaluating a project that has previously been evaluated under CEQA, Guidelines section 15162 directs a lead agency to evaluate the change in the scope of the project or its effects relative to what was described in the prior CEQA evaluation. Specifically, CEQA Guideline section 15162(a) provides that a subsequent EIR would be required if there were substantial changes in the project that involved new significant impacts, a substantial increase in the severity of previously identified significant effects, or mitigation measures or alternatives that would substantially lessen identified environmental effects but which were rejected by the applicant.

CEQA Guideline section 15162(b) directs that if the lead agency determines that a subsequent EIR is not required (i.e., none of the above circumstances exist), then it "shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation." The District has determined that, compared to the environmental effects identified in the 1999 MND, the proposed project will not cause significant new impacts or increase the severity of previously identified impacts. This determination is consistent with the extensive scientific information in the record before the District. In addition, the applicant has agreed to implement all feasible mitigation measures. Therefore, in accordance with CEQA Guideline section 15162(b), the District has prepared a Mitigated Negative Declaration for the District's review of the application.

3.2 The MND Assumes an Improper Baseline for Assessments

The commenter asserts several times that the appropriate "baseline" for CEQA assessments of the proposed project's effects is constituted by the conditions present at about the end of 2006, rather than the conditions in effect at the time Coast Seafoods submitted its application to the District in 1997. The commenter further asserts that the District erred in not describing environmental setting conditions, particularly with respect to chemical contaminants, that were not known in the mid-1990s as essential elements in the setting, and that the MND is therefore defective because it does not assess the relationships that may exist between these later-identified conditions and the proposed project.

The District does not agree that the appropriate baseline for the assessment of impacts is the conditions present currently, finding that the appropriate baseline for CEQA assessment of the proposed project's impacts is the set of conditions that were present or in effect at the time the District began its initial assessment of the applicant's proposed operations. As summarized above, the District initiated its review of the applicant's proposed operations with the acceptance of an application in 1997. As further summarized above, the District did not close the CEQA review process in 1997, and has continuously made clear to all interested parties that the CEQA process for Coast Seafoods' application would not be completed until in interim study period had been completed that allowed the District and other parties to accumulate evidence of the proposal's potential impacts.

The District also does not agree with the commenter that conditions that were not known at the time the application was accepted, but which have become known subsequently, are properly characterized as "baseline" conditions. The District simply observes that there was no indication from water quality regulators or other interested parties, at the time the application was accepted, that Humboldt Bay was "impaired" by these pollutants, or that the environmental setting for the initial CEQA review should have included those concerns. The commenter's statements about the regulatory status of Humboldt Bay as "impaired," or about the status chemical contaminants in Humboldt Bay, are addressed specifically in a subsequent response.

3.3 The MND Inappropriately Identifies Project Modifications as Mitigation

The commenter states that project changes and modifications incorporated into the proposed mariculture operation in order to avoid, reduce, or offset environmental impacts are inappropriately identified as mitigation measures: "the current Mitigated Negative Declaration identifies several purported mitigation measures, even though these elements are already in place and therefore cannot serve as mitigation" (p. 4). The District observes that this comment is a corollary of the comment that the District used the wrong baseline for evaluating the project's potential environmental impacts. As explained above, the District used the correct baseline.

In fact, not recognizing the project alterations adopted by the applicant since the District initiated its environmental review of Coast Seafoods' operations as mitigation for environmental impacts fails to credit either the applicant or the District for complying with the letter and spirit of CEQA, and fails to credit the law itself for achieving the desired end of reducing a proposal's environmental impacts.

The District identifies the project changes incorporated into the proposed project by the applicant, as identified in detail in the Draft MND, as mitigation measures for adverse impacts that would otherwise result from the applicant's Humboldt Bay operations, as described in the application initially considered by the District.

3.4 The MND does not Identify Elements of the Application

The commenter states (p. 2) that the MND "does not clearly identify the proposed project." In particular, the commenter states that the MND does not identify whether the proposed project includes a permit, a tidelands lease, or both, or the type of permit being considered or its term.

The first paragraph of the 1999 MND does, in fact, identify the application as an application for a permit. At no time does any document presented for public review identify an alteration of any tidelands lease as an element of the current application, and the applicant is not seeking to amend any language in any lease.

The District, by ordinance, has two classes of "permit," an emergency permit and a permit. The current application is for a permit, which is a District approval for a proposed action that is subject to District jurisdiction. By historical District practice, permits for approved activities remain in effect indefinitely. An applicant is required to seek District approval, however, any time a permitted activity is changed significantly.

3.5 Effects upon Certain Listed Species are not Identified

The commenter states (p. 2) that the MND does not identify potential impacts on tidewater gobies or brown pelicans, species that are covered by the federal Endangered Species Act.

The District acknowledges that the commenter is technically correct, but observes that there is substantial evidence in the administrative record that these species had already been the subject of consultations between the applicant and the affected federal agency, the U.S. Fish and Wildlife Service, prior to the release of the Draft MND, and the effect of the proposed project was not identified in these consultations as a potentially significant impact. An email from the U.S. Fish and Wildlife Service, included in the records of the U.S. Army Corps of Engineers for this project, includes the following statement:

> "[W]e have determined that the proposed project will have no effect on the tidewater goby, due to a lack of suitable habitat conditions within the project area. In addition, the Service concurs with [the Corps'] determination that this project may affect, but would not likely adversely affect, the California brown pelican or the marbled murrelet, since disturbance to roosting and foraging pelicans and murrelets from mariculture operations is expected to be minimal."

3.6 Effects on Eelgrass are not Adequately Addressed

The commenter states (p. 3) that "the environmental document does not evaluate what is a necessary distance between suspended oyster lines that would prevent impacts to eelgrass. The mitigation measures do not prescribe a distance limit." This statement is incorrect. The application under evaluation is the proposed used of 300 acres, with 2.5-foot line spacing.

In evaluating the proposed project and preparing the Initial Study, the District considered the possibility that requiring increased space between oyster long-lines could be used as a mitigation

measure that might reduce potential impacts to eelgrass coverage and density. The Western Regional Aquaculture Center (WRAC) study cited by the commenter includes study results that could be interpreted to indicate less effect on eelgrass coverage and density with increased line spacing. The WRAC study and additional information in the administrative record include results indicating that off-bottom culture practices avoid and reduce impacts to eelgrass otherwise caused by bottom-culture practices. Accordingly, the District properly concluded that, relative to baseline conditions, the applicant's proposed project will result in less environmental impact.

The District considered the information provided by the applicant during the years of study and evolving project scope, and concluded that there is an inverse relationship between the total tideland area in Arcata Bay used for mariculture and the spacing between lines. The applicant has shown a need for adequate long-line length to cover operating costs and revenue generation. Increasing the spacing between lines thus requires an increase in the total tideland area used. That is, the applicant's proposed use of 300 acres with 2.5-foot line spacing would require a much larger (but not precisely defined) area with 5-foot line spacing, and even more tideland area with greater spacing. After evaluating similar information, both the U.S. Army Corps of Engineers and the California Coastal Commission issued approvals to the applicant for using 300 tideland acres and 2.5-foot line spacing. The District accordingly concluded that 2.5-foot line spacing is appropriate.

The commenter also states "(t)here is no analysis of contributing sources of impacts on eelgrass, such as increased turbidity from stormwater runoff due to development or resuspension of sediment and toxic materials as a consequence of increased boating and other activities on the Bay." This is incorrect, since the Initial Study (p. 3-14) cited the recently certified EIR for the Humboldt Bay Management Plan, which indicated the District's conclusion that the net effect of all actions occurring within Humboldt Bay and its watershed would likely be a reduction in total eelgrass coverage and density.

3.7 The MND does not Evaluate the Significance of the Bay's "Impaired" Water Quality Designation

The commenter (p. 3) notes that Humboldt Bay is designated as an "impaired" water body pursuant to section 303(b) of the federal Clean Water Act, being identified as impaired for dioxins and poly-chlorinated biphenyls (PCBs). The commenter states the opinion that the "Mitigated Negative Declaration should address the presence of these conditions and the potential for individual or cumulative effects from Coast Seafoods operations because of these conditions." As discussed below, the District considered the significance of the bay's "impaired" water quality designation in the recently certified EIR for the Humboldt Bay Management Plan. The District notes that the applicant's operations do not generate dioxins or PCBs. The applicant's historical operations involved bottom culture on more than 500 acres of Humboldt Bay tidelands. Bottom culture involved placing oyster spat and shell on the bay bottom and, after 3-4 years, harvesting the oysters by dragging a chain bag across the bottom to collect mature oysters. The applicant's proposed operations, in contrast, entail growing oysters on lines or racks above the bay bottom and harvesting those oysters by hand or with a mechanical pulley system. Off-bottom culture practices result in less sediment disruption or

mobilization than do bottom culture methods. Thus, compared to baseline, the proposed project will reduce possible sediment disturbances.

The "impaired" status of Humboldt Bay was considered in subsection 6.1.3 of the EIR for the Humboldt Bay Management Plan, which considered the PCB listing (the dioxin listing not having been suggested at the time the EIR was certified). As noted in that EIR, the probable sources of the PCB contamination for Humboldt Bay remain undetermined, but the EIR concluded that PCB contamination had not been demonstrated to have any adverse impacts on any designated beneficial use in Humboldt Bay. The EIR's discussion explicitly included the beneficial use AQUA (aquaculture) as one of the designated beneficial uses. In certifying the EIR and adopting the Management Plan, the District adopted an amendment in Plan policy CAE-4, which committed the District to collaborating with the County of Humboldt, the cities of Eureka and Arcata, the North Coast Regional Water Quality Control Board, and other interested parties in developing a water quality management plan for the bay, which would address the PCB impairment. That mitigation measure was not explicitly focused on the Coast Seafoods application, but it was judged by the District to be sufficient to mitigate the identified cumulative impact to a level of insignificance, and therefore that Plan policy also addressed the same concern with respect to Coast Seafoods.

The District observes that the significance of the bay's "impaired" listing for dioxins is currently unknown. The Management Plan EIR considered contamination by dioxins in subsection 6.1.4. The EIR concluded that dioxin contamination would most likely occur within the bay in close association with bay-margin upland sites where dioxin contamination had been demonstrated (or potentially at upland sites that were contaminated but where the contamination had not been demonstrated). This conclusion was reached owing to the very low water solubility of dioxin and its strong association with soil or sediment particles, which means that dioxins would be expected to remain near upland contamination sources and would not be expected to be widely dispersed within the bay. In adopting the Management Plan, the District certified the EIR with dioxins to be included as an element in the water quality management plan that would result from Mitigation Measure CAE-4.

The 303(d) listing for dioxin is a fundamentally new, cumulative environmental concern for the bay, and it is unclear how it can or should be addressed by the District, the local agencies that regulate upland land uses, and the federal and state agencies that regulate water quality. Few data exist as to the overall extent or distribution of dioxin in bay sediments. Appropriate analytical models for Humboldt Bay do not yet exist and there are simply not enough data regarding overall sediment-linked dioxin levels to provide a fact-based assessment. The District is, however, regularly meeting with the Regional Water Quality Control Board to identify appropriate steps for proceeding to address the dioxin 303(d) listing.

3.8 Cumulative Effects of Waterfront Development are not Adequately Addressed

The commenter (pp. 3-4) states an opinion that the MND should address the cumulative effects of a variety of bay-margin upland land uses, nominally linking these uses to the proposed application through indirect water-quality concerns. The commenter further suggests that the District is somehow obligated to provide, as part of this assessment, a "current description of the Humboldt Bay, its resources, and its conditions."

The District disagrees that this topic is appropriate for the Coast Seafoods MND. The topic of bay-margin land use was addressed extensively in Chapter 12 of the EIR for the Humboldt Bay Management Plan. The District has no authority to specify land uses along the margin of Humboldt Bay, or even to require modifications in the practices of applicants to the agencies that control those lands uses (the County of Humboldt and the cities of Eureka and Arcata). Moreover, the proposed project involves no bay-margin lands, and it is unclear how the District might draw this topic into the assessment.

In a larger, regional context, the District is sympathetic to the notion that there should be a joint consideration of the types and effects of uses in Humboldt Bay together with a consideration of upland, or at least bay-margin, land uses and their effects. However, the District finds that such an assessment should not be a part of the CEQA document for this proposed project.

Mitigation Monitoring/Reporting Program

The Humboldt Bay Harbor, Conservation and Recreation District (District) has adopted a Mitigated Negative Declaration (MND) as an environmental assessment document pursuant to the California Environmental Quality Act (CEQA) for a mariculture proposal in Humboldt Bay by Coast Seafoods (State Clearinghouse No. 99062069).

As part of the MND, the District required several mitigation measures that have the effect of reducing the proposed project's potential environmental effects to less-than-significant levels. These mitigation measures are identified below.

The District will require that all of the following mitigation measures be incorporated into the proposed project. Each mitigation measure will be adopted as a condition of the District's approval of the permit for the proposed project.

The District will assign the responsibility to District staff to verify that each element of all mitigation measures are carried out by the applicant. This assignment of implementation monitoring shall serve as the mitigation monitoring or reporting program required by CEQA, as summarized in CEQA Guidelines section 15074(d).

Mitigation Measure III-1 (Air Quality)

> *The applicant shall consult with the North Coast Unified Air Quality Management District with respect to the requirements of adopted AQMD regulatory plans. The applicant shall comply with the requirements of all adopted air quality plans at all time, including plans covering particulate emissions, and shall implement all actions required by the AQMD for the applicant's mariculture operations.*

Mitigation Measure IV-1/IV-2 (Biological Resources). The applicant shall implement all of the following elements in order to assure that the proposed project's effects on biological resources are reduced to less-than-significant levels.

The District has identified a number of measures that will reduce the impact of the proposed project on biological resources in the Humboldt Bay ecosystem, and the applicant has agreed to implement those measures. The measures include:

- *The operational footprint will be reduced from 500 acres to 300 acres.*
- *The applicant will not initiate any new bottom culture in Humboldt Bay. All previously existing bottom culture beds shall lie fallow unless such beds are included within the 300-acre operational footprint discussed above to be used for 2.5-foot-spaced long line off-bottom culture.*
- *The applicant will not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester within Humboldt Bay.*
- *The applicant will not construct or use bat ray fencing within Humboldt Bay.*
- *The applicant will submit to the District by December 1 of each year an annual report describing the status of each bed within its 300-acre operational footprint.*
- *Where feasible, the applicant will avoid long line harvester vessel contact with the bay bottom. To avoid potential impacts to eelgrass from shading, the applicant will not anchor long line harvesters in such a way as to shade the same area of eelgrass for a period exceeding twelve (12) hours.*
- *No take or harassment (as defined by the Marine Mammal Protection Act) of any marine mammal will be allowed.*
- *All oyster culture activities, for the bed identified in Attachment A as "Sand Island NK" will remain at least 100 meters away from the MHHW line of Sand Island.*
- *The applicant will not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into marine waters.*
- *The applicant will not intentionally deposit shells or any other material on the sea floor. Natural deposition of shells and other materials will be minimized to the maximum extent feasible.*
- *During the months of December, January, and February, the applicant will visually survey those beds to be worked on each day prior to harvesting and/or planting, to determine whether herring has spawned on eelgrass, culture materials, or substrate. If herring spawning is observed, the applicant will (a) postpone for two weeks harvesting and planting activities on those beds where spawning has occurred, and (b) notify the California Department of Fish and Game's Eureka Marine Region office within 24 hours of observation of herring spawning.*
- *The applicant will provide in-kind support to the National Marine Fisheries Service as it conducts additional studies of the interactions among oyster culture and eelgrass.*

- *The applicant will maintain in place its leases with the District, the City of Eureka, and the Karamu Corporation (approximately 3,645 acres). Copies of these leases are available upon request. The applicant will exercise its renewal options, and satisfy its payments and other obligations, in each of the aforementioned leases to ensure that all three leases remain in effect until at least the year 2015. Aside from the 300-acre operational footprint established pursuant to the permit, Coast will not conduct oyster harvesting activities on any of its leased lands. This cessation of activity is intended to offset any perceived environmental impacts of Coast's operations on that 300-acre operational footprint.*

- *The applicant will transfer fifty (50) acres of the tidelands it owns in Humboldt Bay to the District or an environmental conservation organization subject to the consent of State and local regulatory agencies, to ensure said transferred tidelands are permanently protected from any development. The applicant shall consult with the California Department of Fish and Game and the District to select an appropriate 50 acres for said transfer.*

Mitigation Measure VII-1 (Hazardous Materials)

The applicant shall develop and implement an equipment maintenance program for all vessels that are use in its mariculture activities, and shall consider the likelihood of release of fuels, lubricants, paints, solvents, or other potentially toxic materials that may be associated with these vessels as a result of accident, upset, or other unplanned events. The applicant shall prepare an annual summary statement that identifies the maintenance status of each vessel, and shall present this statement to the District for review; the applicant shall address any vessel maintenance concerns identified by the District.

Mitigation Measure VIII-1 (Water Quality)

The applicant shall adopt all of the following practices as elements in its mariculture operations:

- *The applicant shall develop and implement an equipment maintenance program for all vessels that are use in its mariculture activities, as described in Section VII.*

- *The applicant shall not engage in any dredging, hydraulic harvesting, "bed cleaning," or any other activities with a hydraulic harvester.*

- *To the extent feasible, the applicant shall avoid long-line harvester vessel contact with the bay bottom. The applicant shall similarly minimize the extent or degree of sediment mobilization associated with all of its other mariculture activities in the bay.*

- *The applicant shall not discharge feed, pesticides, or chemicals (including antibiotics and hormones) into the bay's waters.*

Additional Mitigation Measure (Debris Removal)

Coast Seafoods shall remove culturing debris remaining from mariculture uses, as well as other discarded materials which occur within the areas used for mariculture, from the areas Coast Seafoods uses in Arcata Bay.

STATE OF CALIFORNIA
ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
Relay Service From TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922

Contact Phone: (916) 574-1814
Contact FAX: (916) 574-1885

February 27, 2007

File Ref: SCH# 1999062069

Mr. Dave Hull
Humboldt Bay Harbor District
PO Box 1030
Eureka, CA 95502-1030

Subject: Coast Seafoods Continued Mariculture in Humboldt Bay

Dear Mr. Hull:

Staff of the California State Lands Commission (CSLC) has received the above referenced Mitigated Negative Declaration. Under the California Environmental Quality Act (CEQA), the Humboldt Bay Harbor District is the lead agency and the CSLC is a Responsible and/or Trustee Agency for any and all projects which could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters.

All tide and submerged lands, as well as navigable rivers, sloughs, etc., are impressed with the Common Law Public Trust. The Public Trust is a sovereign public property right held by the State or its delegated trustee for the benefit of all people. This right limits the uses of these lands to waterborne commerce, navigation, fisheries, open space, recreation, or other recognized Public Trust purposes. Any development, leases or franchises, involving said lands must be consistent with the terms of the legislative grant and the Common Law Public Trust.

The project as proposed involves lands that have been legislatively granted to the Humboldt Bay Harbor Recreation and Conservation District pursuant to Chapter 1283, Statutes of 1970 and as amended, with minerals reserved, therefore a lease from the CSLC will be required only if dredging is required for this project. You should, however, apply to all other agencies having approval authority over these projects.

The State Lands Commission will require involvement in the transfer of the fifty (50) acres of tidelands currently owned by Coast Seafoods.

This letter is without prejudice to any future assertion of state ownership or public rights, should circumstances change, or should additional information come to our attention.

Sincerely,

Marina R. Brand

Marina R. Brand, Assistant Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Grace Kato, CSLC

State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
4665 Lampson Avenue, Ste. C
Los Alamitos, CA 90720
(562) 342-7108

ARNOLD SCHWARZENEGGER, Governor

Flex your Power
HELP CALIFORNIA CONSERVE ENERGY

March 6, 2007

David Hull *(Sent by Fax and US Mail on 3/6/07)*
Humboldt Bay Harbor, Recreation, and Conservation District
PO Box 1030
Eureka, California 95502-1030

Dear Mr. Hull:

The California Department of Fish and Game (Department) has reviewed the Mitigated Negative Declaration (MND) for the Coast Seafoods Continued Mariculture Operations in Humboldt Bay. The Department appreciates the opportunity to comment on the MND. The project involves the continuation of off-bottom shellfish culture operations on 255 acres and the conversion of 45 acres of tidelands from bottom to off-bottom culture in Humboldt Bay. The total operational footprint will be 300 acres of owned and leased tidelands. Aquaculture methods used in the operations will include long-lines, rack and bag, nursery, wet storage floats, FLUPSY (Floating Upwelling System), and clam rafts.

As trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. In this capacity, the Department administers the California Endangered Species Act, the Native Plant Protection Act, and other provisions of the California Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Pursuant to our jurisdiction the Department has the following concerns, comments, and recommendations regarding the MND.

1. Debris resulting from culture operations on the tidelands, such as plastic mesh bags, PVC pipe, and cable ties, is not addressed in the MND. Marine debris is a recognized pollution issue for the oceans today causing mortality to seabirds, turtles, and marine mammals through ingestion. The Department suggests that a mitigation measure be added to the MND requiring all unused materials and debris, especially plastic, be removed from the tidelands to prevent it from entering the marine environment.
2. Pages 3-15 & 3-16: As stated in the MND, the Pinnix et al. (2005) study of fish communities in Arcata Bay did not capture federally or state-listed salmonids. However, the Pinnix report concludes that there were limitations to the study which prevent a definitive conclusion that salmonids were not present. Study limitations included: sample methods which provided avenues of escape for salmonids, lack of night-time sampling, lack of sampling during the peak out migration months, and historical low levels of salmonid populations in the Humboldt Bay watershed. In addition, Pinnix recommended a hydro acoustic

monitoring study be performed using acoustic tags on juvenile salmon to determine where the fish move throughout the bay and what habitats they utilize as they migrate to the ocean. This hydro acoustic study is currently planned for spring 2007.

3. Page 3-16 last paragraph: The MND refers to Department herring data (2004) and suggests that a reduction in herring spawning in east Arcata Bay following the removal of oyster bottom culture in the same area shows that oyster culture has no adverse effect on herring or spawning habitat. The Department would like to clarify the interpretation of these data. The importance of eelgrass as herring spawning substrate is well documented in the literature. Current and historical Pacific herring spawn assessment studies in Humboldt Bay show the importance of east Arcata Bay to successful herring spawning. For example, during the 2000-2001 spawning season 81 percent of the total spawn biomass for Humboldt Bay occurred on eelgrass in east Arcata Bay. The quality, health, and abundance of spawning substrate are critically important to herring spawning success. However, the size of herring populations entering California bays and estuaries fluctuate from year to year for many reasons. For example, the strong El Niño events which occurred in 1982-83, 1992-93, and 1997-98 had negative impacts on herring populations statewide as evidenced by lowered commercial landings and spawn escapement biomass estimates during the El Niño event and/or the following season. Pacific herring, a short lived pelagic species, is negatively impacted by poor oceanic and bay environmental conditions. Therefore, maintaining high quality spawning habitat, such as eelgrass, is critically important to ensure spawning success.
4. Coast Seafoods has been permitted by the California Coastal Commission to re-plant in long lines a maximum of 11.5 acres in east Arcata Bay on EB 7-2 in order to protect herring spawning substrate. The Department suggests that this condition be included as a mitigation measure in the MND.

The Department appreciates the opportunity to provide comments on the MND. As always, Department personnel are available to discuss our concerns, comments, and recommendations in greater detail. To arrange for discussion, please contact Ms. Vicki Frey, Environmental Scientist, 619 2nd St., Eureka, CA. 95501, (707) 445-7830

Sincerely,

Gary B. Stacey
Regional Manager, Marine Region

cc: Mr. Greg Dale
Coast Seafoods Company
25 Waterfront Drive
Eureka, CA 95501

cc: Cont. on Page 2

cc: Mr. Robert Merrill
California Coastal Commission
710 E. Street
Eureka, CA 95501

Ms. Becky Ota
Department of Fish and Game
Belmont, California

Ms. Vicki Frey
Department of Fish and Game
Eureka, California

Mr. Tom Moore
Department of Fish and Game
Bodega Bay, California

State Clearinghouse
Sacramento, CA

LAW OFFICES OF SHARON E. DUGGAN
370 Grand Avenue Suite 5
Oakland, CA 94610
(510) 271-0825 Facsimile: (510) 271-0829

March 6, 2007 HAND DELIVERED ON SAME DATE

Humboldt Bay Harbor, Recreation and Conservation District
P.O. Box 1030
601 Startare Drive
Eureka, CA 95502

ATTN: David Hull, Chief Executive Officer

RE: Coast Seafoods Application for Continued Mariculture Operations in Humboldt Bay, California
Mitigated Negative Declaration

Dear Mr. Hull:

I am writing on behalf of the Environmental Protection Information Center (EPIC) and Humboldt Baykeeper. As you know, these organizations have a long-standing interest in and commitment to the health of the Humboldt Bay and its vibrant ecology. They have monitored the activities of Coast Seafoods for some time, primarily concerned about the impact of those activities on the Bay.

We have reviewed the proposed Mitigated Negative Declaration. Coast Seafoods has improved its operations for the better, most particularly by eliminating bottom culture operations and the effects associated with such operations. That said, we do not believe the proposed Mitigated Negative Declaration adequately addresses the full scope of the current-day project, its environmental setting, the potential for impacts, or mitigation.

We understand that the District is treating this Mitigated Negative Declaration as a "continued CEQA document," with "tiered review" in reliance upon the December 2, 1999 Mitigated Negative Declaration issued for Coast's operations. In so doing, the District is defining the "environmental baseline" for impact assessments as the baseline that existed when Coast applied to the District in 1997. We believe this is not a valid CEQA approach for several reasons.

First, it is clear from the 1999 negative declaration that the District did not have sufficient baseline information to meet its CEQA obligations. The Draft Mitigated Negative Declaration stated:

> "The District has concluded that it cannot meet this obligation on the basis of known information. That is, the extent of existing information about Humboldt Bay, its natural ecological systems and processes, and the proposed activity does not meet the requirements of the Districts' CEQA obligations for identifying the environmental setting of the Coast Seafoods proposal, for accurately identifying potential impacts, or for specifying effective mitigation measures."

It is clear from this language that the District understood it did not have adequate information about the environmental baseline from which it could assess potential impacts. It cannot now reach back and rely upon a baseline which it knows is informationally deficient.

Second, as is also clear from the 1999 document, the District chose to authorize only a one-year permit with annual renewals, not to exceed five years. Thus the District adopted the mitigated negative declaration "as a CEQA document for the current proposal" in 1999. (Emphasis in original.) That document cannot now be used for "tiering" as the current document indicates, as it was expressly designed and limited to a one-year permit.

The current proposed Mitigated Negative Declaration does not clearly identify the proposed project. It concedes that the current application includes a substantial number of project elements or modifications that differ from the 1997 application. However, the current review document does not identify what is being considered; specifically, whether a permit or a lease, or both, is the subject of the review. The 1999 mitigated negative declaration states that the "'project' covered by this Initial Study is the renewal of the tidelands lease by the Harbor District for the applicant's use of Arcata Bay for mariculture activities." The current document does not identify a lease as part of the project. It references that the current leases will remain in effect until 2015, but does not specify whether those are part of the project. Nor does the current document describe the type of permit being considered or its term. Obviously, the term of any permit is relevant information necessary to evaluate what may be the effects of this project. This information is a necessary component to understand what is being authorized and what effects it may have.

The proposed environmental review also fails to evaluate the effects of the project. For example, in 1999 the mitigated negative declaration relied upon the Army Corps of Engineers PN 22720N, which identifies the presence of California brown pelicans and the tidewater goby as protected species which may be impacted by the operations. As for the California brown pelican, which uses the Mad River Slough area adjacent to Coast Seafoods operations, the ACE stated that "[t]he impact of Coast Seafoods operations overall to the pelicans may be a moderate, direct, long-term impact on the pelicans. Actual impacts are unknown at this time." While concluding that there may be "negligible impacts on any tidewater gobies present" the ACE stated that

"actual impacts are not known at this time." Yet, a review of the Mitigated Negative Declaration makes absolutely no mention of these species. Nor are these species referenced in the Biological Assessment (BA) provided with the Mitigated Negative Declaration.

The Mitigated Negative Declaration relies upon the Western Regional Aquaculture Center (WRAC) study in Humboldt Bay to conclude that there will be no impact on eelgrass from the proposed operations. Remarkably, it appears the District now believes that the Coast Seafoods operations may be beneficial to eelgrass conditions. The WRAC study stands for the proposition that bottom culture oyster farming is not good for eelgrass, and that the eelgrass spatial cover "was directly related to the density of oysters" where long-line culture is used. The environmental document does not evaluate what is a necessary distance between suspended oyster lines that would prevent impact to eelgrass. The mitigation measures do not prescribe a distance limit. There is no analysis of contributing sources of impacts on eelgrass, such as increased turbidity from stormwater runoff due to development or resuspension of sediment and toxic materials as a consequence of increased boating and other activities on the Bay.

The environmental checklist conclusion that "the proposed project, as mitigated, will not result in significant impacts to eelgrass within the analytical framework that this assessment uses" is unsupported. The environmental checklist states, this conclusion is based on the "the conditions and practices in effect at the time that the District assumed permit authority for mariculture in Humboldt Bay . . . ." However, at that time, Coast Seafoods used bottom culture. It discontinued that use. The District is obligated to evaluate the effect of current operations, in the context of current conditions, to understand what effect operations may have on eelgrass, or any other resource.

Current day conditions not fully considered include the presence of dioxin and PCBs. No mention is made of these contaminants in either the Initial Study or the Draft Mitigated Negative Declaration, while the Biological Assessment mentions PCBs only briefly. Instead, the Biological Assessment describes the water quality of Humboldt Bay as "the best water quality of any bay in California and its water quality is improving . . ." This completely ignores the existing determination by the California State Water Resources Control Board that lists the Bay as an impaired water body because of dioxin and PCBs (polychlorinated biphenyls). These toxic chemicals and other residues may be resuspended when bay sediments are disturbed by the Coast Seafoods operations. The Mitigated Negative Declaration should address the presence of these conditions and the potential for individual or cumulative effects from Coast Seafoods operations because of these conditions.

Another example of current day conditions that must be taken into account is the enhanced development and infrastructure along the Bay and its waterfront. These projects have

impacts, increase stormwater runoff to the Bay, which have individual and cumulative effects. A lot has happened on the Bay since 1998 when the District issued the limited purposed mitigated negative declaration. A current description of the Humboldt Bay, its resources and its conditions must be provided.

Additionally, the current Mitigated Negative Declaration identifies several purported mitigation measures, even though those elements are already in place and therefore cannot serve as mitigation. For example, the document states that Coast Seafoods will convert all bottom culture to off-bottom culture, as though this is something to be done in the future. In fact, Coast Seafoods has already discontinued bottom culture operations. Likewise, the discontinuation of dredging and reduction of the footprint to 300 acres has already been accomplished. It is inappropriate to treat these as mitigation. Similarly, the document considers the removal of bat ray fencing as mitigation, even though that too has already been accomplished.

While we believe Coast Seafoods has improved its operations, we cannot concur that the proposed Mitigated Negative Declaration adequately addresses the potentially significant environmental effects. Reliance upon the 1999 mitigated negative declaration as the baseline for environmental assessment is in error because it does not provide an accurate presentation of the environmental setting. The current document does not adequately describe the full scope of the project, particularly in terms of the nature of the permit or lease, and the term of such permit. In the absence of a valid description of the current environmental setting and the project, it is impossible to conclude what the environmental effects of the Coast Seafoods project are. And the analysis is further undermined because the Mitigated Negative Declaration fails to even take into account specific resources and conditions of the Humboldt Bay. Additionally, cumulative effects related to Coast Seafoods operations are not evaluated. Because Coast Seafoods has already implemented many of the claimed mitigation measures, and constitute current day operations, those mitigation measures cannot be used to justify the Mitigated Negative Declaration.

Because Coast Seafoods continues to pursue a major project in the Humboldt Bay, which has a myriad of effects, it is necessary for the District to require an environmental impact report, which can evaluate not only the full scope of the project, in view of current conditions, but also alternatives to the project. To date, no agency has required the necessary full environmental review, through an environmental impact report or the environmental impact statement (under NEPA). This is necessary so that the public can be assured that the real effect of these operations are adequately disclosed and analyzed.

We appreciate your careful consideration of these comments.

Sincerely,

Sharon Duggan

Sharon E. Duggan

sed.fw
cc: EPIC
Humboldt Baykeeper

enc. Excerpt of 2006 CWA Section 303(d) list of Water Quality Limited Segments

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2006 – 0079

APPROVING THE PROPOSED 2006 FEDERAL CLEAN WATER ACT SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS FOR CALIFORNIA
[PROPOSED 2006 SECTION 303(d) LIST]

WHEREAS:

1. Section 303(d) of the federal Clean Water Act (CWA) requires the state to identify surface waters that do not meet applicable water quality standards even after the applications of the technology-based effluent limitations required by sections 301(b) and 306 of CWA.

2. The list of water quality limited segments identified according to CWA section 303(d) must include a description of the pollutants not meeting standards and shall include a priority ranking for all listed water quality limited segments still requiring Total Maximum Daily Loads (TMDLs), specifically identifying waters targeted for TMDL development in the next two years.

3. State Water Resources Control Board (State Water Board) staff used the Water Quality Control Policy for Developing California's CWA Section 303(d) List (Resolution No. 2004-0063) as a guide in developing the changes to the list.

4. In developing the proposed 2006 section 303(d) list, State Water Board staff has considered all readily available data and information.

5. State Water Board staff conducted two public workshops during the development of the proposed 2006 section 303(d) list.

6. State Water Board staff received many comments during development of the proposed 2006 section 303(d) list, responded to all comments received, and made several changes in response to the comments.

7. State Water Board staff has made recommendations to add, remove, or change the list of water body-pollutant combinations on the proposed 2006 section 303(d) list.

8. The State Water Board received comments on October 25, 2006 that bacteria data at coastal beaches and toxicity measurements in Walnut Creek (Los Angeles Region) should be more fully analyzed and new listings or delistings considered.

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the 2006 section 303(d) list of water quality limited segments, attached as Attachment A. The lists are also available on the State Water Board's website at:

http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/state_final303dlist.pdf

http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/statetcl_final303d.pdf

http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/stateepl_final303d.pdf

2. Authorizes the Executive Director or designee to transmit the attached 2006 section 303(d) list and other supporting information to the U.S. Environmental Protection Agency for approval.

3. During review by the U.S. Environmental Protection Agency, the State Water Board encourages the U.S. Environmental Protection Agency, with the assistance of State Water Board staff, to carefully review additional data supporting the listing of several California coastal beaches and delisting Walnut Creek for toxicity, and to consider modifying the 2006 section 303(d) list accordingly.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 25, 2006.

AYE:	Tam M. Doduc Arthur G. Baggett, Jr. Charles R. Hoppin Gary Wolff, P.E., Ph.D.
NO:	None
ABSENT:	Gerald D. Secundy
ABSTAIN:	None

Song Her
Clerk to the Board

PROPOSED 2006 CWA SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS

SWRCB APPROVAL DATE: OCTOBER 25, 2006

REGION	TYPE	NAME	CALWATER WATERSHED	POLLUTANT/STRESSOR	POTENTIAL SOURCES	ESTIMATED SIZE AFFECTED	PROPOSED TMDL COMPLETION
1	B	Eureka Plain HU, Humboldt Bay	11000000	Dioxin Toxic Equivalents		16075 Acres	2019
					Source Unknown		
				PCBs (Polychlorinated biphenyls)		16075 Acres	2019
				This listing was made by USEPA.			
					Source Unknown		
1	R	Eureka Plain HU, Jacoby Creek watershed	11000000	Sediment		19 Miles	2019
				The Eureka Plain HU, Jacoby Creek watershed includes the following Calwater Planning Watersheds (PWS): 110.00010 and 110.00013. The beneficial uses of Jacoby Creek appear to be threatened. Specifically, records show a decline in the salmonid fishery in Jacoby Creek, and this decline appears to be correlated with sedimentation.		
					Silviculture		
					Road Construction		
					Land Development		
					Disturbed Sites (Land Develop.)		
					Urban Runoff/Storm Sewers		
					Hydromodification		
					Channelization		
					Removal of Riparian Vegetation		
					Streambank Modification/Destabilization		
					Drainage/Filling Of Wetlands		
					Channel Erosion		
					Erosion/Siltation		
					Sediment Resuspension		
					Natural Sources		
					Nonpoint Source		

Region 1

Water Segment:	Eureka Plain HU, Humboldt Bay
Pollutant:	Dioxin Compounds
Decision:	List
Weight of Evidence:	This pollutant is being considered for placement on the section 303(d) list under section 3.5 of the Listing Policy. One line of evidence is available in the administrative record to access this pollutant. Based on readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Limited Segments category. This conclusion is based on the staff findings that: 1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy. 2. The data used satisfies the data quantity requirement of section 6.1.5 of the Policy. 3. Fourteen of 29 samples in the northern and southern bay sections exceeded the OEHHA Screening value and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy. 4. Pursuant to section 3.11 of the Listing Policy, no additional data and information are available indicating that standards are not met.
SWRCB Staff Recommendation:	After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

Lines of Evidence:

Numeric Line of Evidence	Pollutant-Tissue
Beneficial Use:	CM - Commercial and Sport Fishing (CA), CO - Cold Freshwater Habitat
Matrix:	Tissue
Water Quality Objective/ Water Quality Criterion:	North Coast RWQCB Basin Plan. All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.
Evaluation Guideline:	3ng/kg OEHHA Screening Value.
Data Used to Assess Water Quality:	Fourteen out of 29 samples exceeded the screening value. Crab, mussel, oyster and sculpin samples were taken in the North and South Bays from 3/24/02 to 10/25/02. (Smith, 2006).
Spatial Representation:	Two sample location (Lappe S2) in the southern section of the bay, south of the mouth and 12 samples in the northern section of Humboldt Bay. Some samples taken in close proximity were averaged (pursuant to

	Section 6.1.5.2 of the Policy).
Temporal Representation:	Samples were taken from 3/24/02 to 10/25/02.
Data Quality Assessment:	Sierra Pacific Industries Humboldt Bay.