

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Los Angeles

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
for
STELLAR BIOTECHNOLOGIES INC.

NPDES Permit No.: CA0063070
Public Notice No.: 00-017

FACILITY ADDRESS

Stellar Biotechnologies, Inc.
448 Lighthouse Circle
Port Hueneme, California

FACILITY MAILING ADDRESS

Stellar Biotechnologies, Inc.
448 Lighthouse Circle
Port Hueneme, California

Contact: Mr. John McMullen
Telephone: (805)488-4967

I. PUBLIC PARTICIPATION

A. Public Comment Period

By April 17, 2001, the local newspaper will have published the public notice of the intent of the California Regional Water Quality Control Board, Los Angeles Region, (Regional Board) to consider, during its May 24, 2001 meeting, the reissuance of the waste discharge requirements (WDRs) and National Pollutant Elimination System (NPDES) permit to Stellar Biotechnologies Inc. (SBI). The WDRs and NPDES permit regulate discharges from SBI. The staff determinations are tentative. Interested persons are invited to submit written comments upon these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

To be fully responded to by staff and considered by the Regional Board, written comments should be received by May 10, 2001.

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs and NPDES permit during its regular meeting on the following date, time and place:

Date: May 24, 2001
Time: 9:00 a.m.
Location: Richard H. Chambers U.S. Court of Appeals Bldg
Pasadena, CA 91105

Interested parties and persons are invited to attend. At the public hearing, the Regional Board will hear any testimony, if any, pertinent to the discharge, WDRs and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

C. Waste Discharge Requirement Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final Waste Discharge Requirements. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

D. Information and Copying

Copies of the tentative WDRs and NPDES permit, report of waste discharge, fact sheet, comments received, and other documents relative to the tentative WDRs are available at the Regional Board office. Inspection and/or copying of these documents are by appointment scheduled between 8:00 am and 4:50 p.m., Monday through Friday, excluding holidays. For appointment please call the Los Angeles Regional Board at (213) 576-6600.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should leave write to the Regional Board, Attention: Vilma Correa.

II. BACKGROUND

SBI, a California "C" corporation, is located at 448 Lighthouse Circle at the southeast tip of Port Hueneme Harbor. SBI obtains its intake water from the harbor entrance. SBI is not filtering the intake water prior to using it in its facility, but it plans to begin using sand filtration in the near future. When the filter is installed, the filter backwash will be discharged back to the ocean via the discharge pipe. The intake water is pumped to a

holding tank. Then, by means of gravity flow, the water cascades through a series of tanks that house abalone and other marine organisms. As the water passes through the tanks, the marine organisms may contribute small amounts of waste. The wastewater is not re-circulated. It is allowed to flow through and is discharged through a common drain. No chemicals are added to the water during any part of the operation. The process generates up to 4.32 million gallons per day (MGD) of aquaculture wastewater. SBI discharges the wastewater to the Port Hueneme Harbor, a water of the United States.

III. PURPOSE OF ORDER

SBI discharges the wastewater to a point (Discharge Serial No. 001, Latitude 34° 08' 36"; Longitude 119° 13' 48") close to the mouth of Port Hueneme Harbor. Wastes discharged from SBI are regulated by WDRs and NPDES (NPDES) permit contained in Regional Board Order No. 97-137 (NPDES Permit No. CA0064131). Order No. 97-0-58 expires on April 10, 2002. SBI has filed a report of waste discharge and has applied for renewal of its WDRs and NPDES permit. The tentative order is the reissuance of the WDRs and NPDES permit for discharges from SBI.

IV. FACILITY AND WASTE DISCHARGE DESCRIPTION

SBI discharges waste to a point (Discharge Serial No. 002, Latitude 34° 08' 36"; Longitude 119° 13' 48") close to the mouth of Port Hueneme Harbor.

The Report of Waste Discharge, Form 2E, describes the effluent characteristics as follows:

<u>Constituent</u>	<u>Units</u>	<u>Maximum Daily Value</u>
pH	Standard Unit	8.2 – 8.4
Temperature	°C	14 - 18
BOD ₅ 20 °C	mg/L	ND
Total Suspended Solids	mg/L	10
Oil and Grease	mg/L	ND
Fecal Coliform	MPN/100 ml	7

V. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Ocean vs. Non-Ocean Discharge Applicability

The 1997 California Ocean Plan (Ocean Plan) presents the following definitions:

Ocean Waters are the territorial marine waters of the State as defined by the California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

Enclosed Bays are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is

not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Port Hueneme is an artificial harbor constructed by the US Navy that meets the Ocean Plan criteria of an Enclosed Bay. The harbor includes a narrow segment that may be considered a channel, but in reality, includes docking and terminal facilities not unlike the harbor proper. Consequently, it should be characterized as part of the harbor. At the mouth, the harbor is protected by harborworks that extend seaward from the natural coastline.

Accordingly, all plans and policies applicable to the enclosed bays and estuaries of California are applicable to the discharges from this facility.

B. The federal Clean Water Act (CWA).

C. *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains water quality objectives for, and lists the following beneficial uses for the Port Hueneme Harbor:

Existing: industrial, navigation, contact and non-contact water recreation, commercial and sport fishing, marine habitat, and preservation of rare and endangered species.

D. *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan).

E. *The California Toxics Rule* (CTR) promulgated by the USEPA on May 18, 2000 and *The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) adopted by the State Board on March 2, 2000. The SIP was effective April 28, 2000 with respect to the priority pollutants criteria that were promulgated for California by the USEPA through the National Toxics Rule (NTR) and also with respect to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on "alternate test procedures for individual discharges" that have been approved by the USEPA Regional Administrator. The "alternate test procedures" provision was effective on May 22, 2000. The SIP was effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR.

F. Valid existing Waste Discharge Requirements contained in Regional Board Order No. 95-058, adopted by the Regional Board on May 12, 1997. Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that water-quality based effluent limits in re-issued permits are at least as stringent as in the existing permit (anti-backsliding). Therefore, some of the requirements in the proposed Order are based on limits specified in the SBI's existing permit.

VI. REGULATORY BASIS FOR EFFLUENT LIMITATIONS

A. Water Quality-Based Effluent Limitations (WQBELs)

The WQBELs are based on the Basin Plan, other State plans and policies, or USEPA water quality criteria. These requirements, as they are met, will protect and maintain existing beneficial uses of the receiving water.

The CTR and SIP require dischargers to submit sufficient data to determine the priority pollutants requiring WQBELs and to calculate effluent limitations. To protect the beneficial uses of the Port Hueneme Harbor, the CTR criteria for saltwater or human health for consumption of organisms, whichever produced more stringent limitations, were used to prescribe the effluent limitations in this Order.

B. Reasonable Potential Analysis (RPA)

As specified in 40 CFR 122.44(d)(1)(i), permits are required to include limits for pollutants that are or may be discharged at a level which cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard.

For toxic pollutants, according to the SIP, a WQBEL is required when:

- a. the maximum effluent concentration (MEC) is greater than or equal to the most stringent applicable water quality criteria in the CTR (C), or
- b. the background water quality (B) is greater than C.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger shall be required to gather the appropriate data for the Regional Board's RPA. Upon review of the data, and if the Regional Board determines that effluent limits are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

RPA was performed for the conventional/non-conventional and toxic pollutants that had effluent data. For most toxic pollutants, no background or effluent data were available. However, the Regional Board has determined that, based on the reported nature of the operations and the facility's performance history, and except for metals, there was no evidence that discharges from SBI cause, have a reasonable potential to cause, or contribute to an excursion above any applicable toxic pollutant criterion or objective. SBI is required to collect sufficient data for other metals, so that a RPA can be performed for these constituents. The SBI's December 2000 report indicates detectable concentrations for copper and zinc in the influent as well as the effluent. Section 1.3 (Step 4) of the SIP requires that a limit be prescribed for a constituent whose reported maximum concentration in the effluent is higher than the applicable criterion specified in the CTR. Background concentration data (influent) is not a factor in this determination. This triggers effluent limitations for copper and zinc. However, since SBI does not use any metals in its seawater handling operations, it may not be responsible for the detectable metals values in its effluent. Therefore, the Regional Board has determined that an influent and effluent monitoring program for metals is necessary. The Regional Board will consider removing

these requirements after reviewing the data. In addition, the Regional Board has determined that, based on the reported nature of the operations, the discharge from SBI is not toxic to the receiving waters.

C. WQBEL for a toxic pollutant

Section 1.3 (Step 4) of the SIP requires that a limit be prescribed for a constituent whose reported maximum concentration in the effluent is higher than the applicable criterion specified in the CTR. SBI has reported a value of 9 µg/L for copper in its December 1999 monitoring report. SBI has also reported a value of 240 µg/L for zinc in its December 2000 monitoring report. The CTR specifies 3.7 µg/L and 5.8 µg/L as criterion continuous and maximum concentrations (total recoverable) for copper in saltwater, respectively. The CTR specifies 85.6 µg/L and 95.1 µg/L as criterion continuous and maximum concentrations (total recoverable) for zinc in saltwater, respectively. Therefore, a limit, according to the following calculations, has been assigned for copper and zinc in this order.

Limitation Calculation for Copper

- **SIP (1.3) RPA**
Maximum Effluent Concentration (MEC) = 9 µg/L
Most Stringent Applicable Criterion (C) = 3.1 µg/L (based on Saltwater)
MEC > C, therefore, a WQBEL is required.
- **SIP (1.4)**
Step 1. Applicable Water Quality Criteria – Saltwater
Criterion (acute) = 4.8 µg/L
Criterion (chronic) = 3.1 µg/L
- Adjust Criterion – Convert from dissolved fraction to total recoverable
ECA chronic = 3.1 µg/L ÷ 0.83 (conversion factor for saltwater criterion, SIP Appendix 3) = 3.7 µg/L

ECA acute = 4.8 µg/L ÷ 0.83 (conversion factor for saltwater criterion, SIP Appendix 3) = 5.8 µg/L
- **Step 2.** Effluent Concentration Allowance - ECA
ECA = C
- **Step 3.** ECA Multipliers – Since the number of effluent data points is less than ten, set coefficient of variation (CV) equal to 0.6.

LTA acute = ECA acute * ECA multiplier_{acute 99} (from SIP, Table 1) =
= (5.8)*(0.321) = 1.86 µg/L

LTA chronic = ECA chronic * ECA multiplier_{chronic 99} (from SIP, Table 1) =
= (3.7)*(0.527) = 1.95 µg/L

- **Step 4.** Select the lowest of the LTAs:
LTA = 1.86 µg/L
- **Step 5.** Average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL)
Sampling frequency less than four times a year => n = 4

AMEL_{aquatic life} = LTA * AMEL_{multiplier95} (from Table 2) = (1.86)*(1.55) = 2.88 µg/L

MDEL_{aquatic life} = LTA * MDEL_{multiplier99} (from Table 2) = (1.86)*(3.11) = 5.78 µg/L
- **Step 6.** Human Health Criteria
No criteria set for human health (Organisms Only) => not applicable
- **Step 7.**
AMEL = 2.88 µg/L
MDEL = 5.78 µg/L

Limitation Calculation for Zinc

- **SIP (1.3) RPA**
Maximum Effluent Concentration (MEC) = 240 µg/L
Most Stringent Applicable Criterion (C) = 85.6 µg/L (based on Saltwater)
MEC > C, therefore, a WQBEL is required.
- **SIP (1.4)**
Step 1. Applicable Water Quality Criteria – Saltwater
Criterion (acute) = 90 µg/L
Criterion (chronic) = 81 µg/L
- Adjust Criterion – Convert from dissolved fraction to total recoverable
ECA chronic = 81 µg/L ÷ 0.946 (conversion factor for saltwater criterion, SIP Appendix 3) = 85.6 µg/L

ECA acute = 90 µg/L ÷ 0.946 (conversion factor for saltwater criterion, SIP Appendix 3) = 95.1 µg/L
- **Step 2.** Effluent Concentration Allowance - ECA
ECA = C
- **Step 3.** ECA Multipliers – Since the number of effluent data points is less than ten, set coefficient of variation (CV) equal to 0.6.

LTA acute = ECA acute * ECA multiplier_{acute 99} (from SIP, Table 1) =
= (95.1)*(0.321) = 30.5 µg/L

$$\begin{aligned} \text{LTA chronic} &= \text{ECA chronic} * \text{ECA multiplier}_{\text{chronic 99}} \text{ (from SIP, Table 1)} = \\ &= (85.6) * (0.527) = 45.1 \mu\text{g/L} \end{aligned}$$

- **Step 4.** Select the lowest of the LTAs:
LTA = 30.5 $\mu\text{g/L}$
- **Step 5.** Average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL)
Sampling frequency less than four times a year => n = 4

$$\text{AMEL}_{\text{aquatic life}} = \text{LTA} * \text{AMEL}_{\text{multiplier95}} \text{ (from Table 2)} = (30.5) * (1.55) = 47.3 \mu\text{g/L}$$

$$\text{MDEL}_{\text{aquatic life}} = \text{LTA} * \text{MDEL}_{\text{multiplier99}} \text{ (from Table 2)} = (30.5) * (3.11) = 94.9 \mu\text{g/L}$$

- **Step 6.** Human Health Criteria
No criteria set for human health (Organisms Only) => not applicable
- **Step 7.**
AMEL = 47.3 $\mu\text{g/L}$
MDEL = 94.9 $\mu\text{g/L}$