Vibrio parahaemolyticus Management Plan

Summer 2010

Revised May, 2010

New Jersey Department of Environmental Protection

Bureau of Marine Water Monitoring

and

New Jersey Department of Health and Senior Services

Shellfish Program

Introduction

Vibrio parahaemolyticus is an organism that occurs naturally in coastal waters. It is not related to pollution, which means that traditional controls for shellfish sanitation related to growing water classification are marginally effective. Instead, the occurrence of this pathogen in elevated levels appears to be related to the interaction of environmental variables such as temperature, salinity, fresh water inflow to the bay and tidal flushing. Procedures for dealing with this pathogen have been developing over the past several years through the Interstate Shellfish Sanitation Conference. In August of 2007, the conference adopted a plan for managing *Vibrio parahaemolyticus*. This plan was subsequently amended by the Executive Board of the ISSC in June of 2008.

According to the amended Plan:

Every State from which oysters are harvested shall conduct a *Vibrio parahaemolyticus* risk evaluation annually. The evaluation shall consider each of the following factors, including seasonal variations in the factors, in determining whether the risk of *Vibrio parahaemolyticus* infection from the consumption of oysters harvested from an area (hydrological, geographical, or growing) is reasonably likely to occur: Based on this assessment and the ISSC Guidance Template, a plan for an area(s) or a state must include control measures for the month(s) in which:

1. **The total number of *Vp* illnesses is two or more in a three-year period.** - for NJ, this would be the months of June and July in Growing Area DB-1. Illnesses were attributed to these months in 2001, 2002 and 2008.
2. **The area was epidemiologically linked to an outbreak within the prior five (5) years and the plan must also apply to the period 30 days prior to the first day of harvest of the outbreak and 30 days after the last day of harvest associated with the outbreak.** Growing Area DB-1 was linked to an outbreak in 2008.
3. **The average water temperatures representative of harvesting conditions meet or exceed 60ºF for states bordering the Pacific Ocean and 81ºF for states bordering the Gulf of Mexico and Atlantic Ocean (New Jersey and south). See exemption in proposal 07-202 in summary of actions (to be incorporated into the 2007 NSSP Model Ordinance as Chapter II.@.05.B.2.)** - Based on the most recent 5 years of data, NJ's bay water temperatures average in the mid-70's during the time of day when harvesting is occurring.

According to the NSSP's Model Ordinance, if a State's *Vibrio parahaemolyticus* risk evaluation determines that the risk of *Vibrio parahaemolyticus* illness from the consumption of oysters harvested from a growing area is reasonably likely to occur, the State shall develop and implement a *Vibrio parahaemolyticus* Contingency Plan for that area.

Based on the ISSC Template, for compliance with the Model Ordinance, NJ needs a Vp control plan for Area DB-1. The Risk Assessment Model developed by the U.S. Food

and Drug Administration (FDA) was used to further assess the risk associated with the summer months and to determine what hours of harvest would be protective of public health, relative to Vp.

Based on this assessment, the control measures that NJ will employ are contained in this plan (the 2009 NJ Vp Contingency Plan). The specific control measures will be to limit time from harvest to refrigeration based on modeling and assuring that the product is down to temperature prior to shipment from NJ. These controls have been established in consultation with FDA.

The Contingency Plan shall define the administrative procedures and resources necessary to accomplish the following (the lead agency in New Jersey for each item is listed in parentheses after the item):

1. Identify and define growing areas in the state affected by *V. parahaemolyticus* based on hydrographic and geological parameters and other considerations relevant to control of a naturally occurring pathogen (NJDEP/ Bureau of Marine Water Monitoring).
2. Close affected oyster growing areas (NJDEP/ Bureau of Marine Water Monitoring).
3. Prevent harvesting of affected oysters (NJDEP/ Marine Enforcement and NJ State Police/ Marine Bureau).
4. Provide for oyster recall if an oyster growing area is closed as a result of illness (NJDHSS)
5. Notify the shellfish industry and local health jurisdictions in the state of the potential for illnesses due to *V. parahaemolyticus* prior to historical times of onset or at a minimum of once a year (NJDHSS).
6. Issue a health advisory to the public about the potential problem and advise the industry to educate wholesalers, retailers, and consumers about the potential problem, with recommendations that oysters not be consumed raw during periods historically affected by *V. parahaemolyticus* (NJDHSS).

Coordination of New Jersey Agencies Responsible for Shellfish Sanitation

The National Shellfish Sanitation Program (NSSP) is accomplished in New Jersey through a coordinated effort of five agencies. These agencies, their physical locations, their role in shellfish sanitation and their relationship to one another are shown in . Implementation of the *Vibrio parahaemolyticus* Contingency Plan will require cooperation and communication among these agencies.

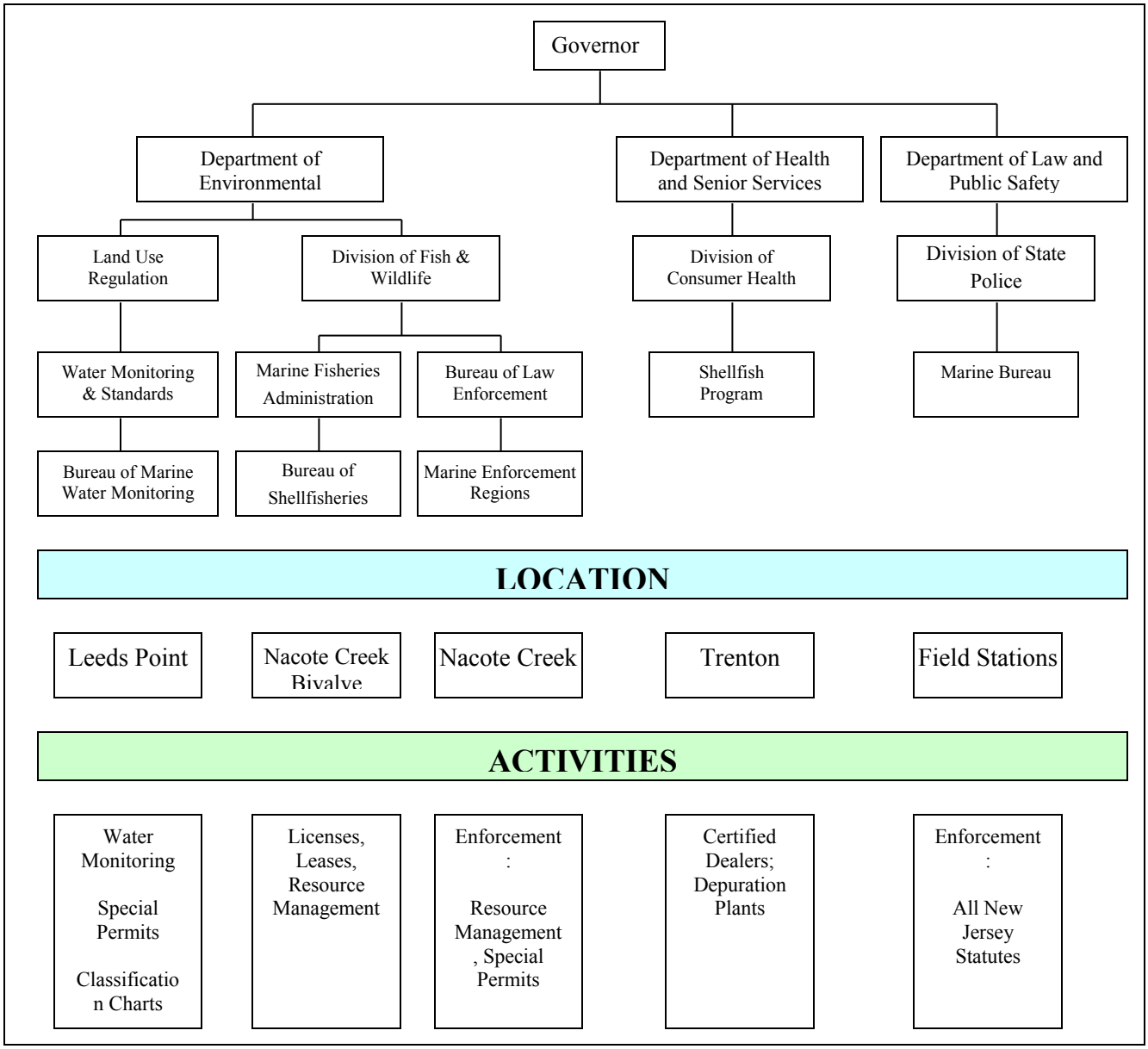

Figure 1

Response to a Vibrio parahaemolyticus Outbreak

In the event of confirmed cases of shellfish related food borne illnesses caused by the naturally occurring marine bacterium *Vibrio parahaemolyticus,* the New Jersey State Department of Environmental Protection (NJDEP) and the New Jersey Department of Health and Senior Services (NJDHSS) shall follow the guidelines of the National Shellfish Sanitation Program, Model Ordinance "Control Plan for *Vibrio parahaemolyticus*" adopted at the 2007 Interstate Shellfish Sanitation Conference (ISSC) and amended in 2008 by the Executive Board of the ISSC.

The Model Ordinance specifies actions to take when particular numbers of individual cases of food borne illnesses attributable to *Vibrio parahaemolyticus* in shellfish occur within certain time frames. In the event that NJDHSS confirms an outbreak involving two or more illnesses from one harvest area within a short time frame, the implicated harvest area must be closed as specified in Chapter II @.01 of the NSSP "Guide for the Control of Molluscan Shellfish." That action will be handled in the following manner by the NJDEP and NJDHSS.

1. Harvest Suspension based on Vp illness outbreak

1.1. Upon receiving verification from NJDHSS that a food borne illness outbreak[1] caused by *Vibrio parahaemolyticus* (Vp) is significantly associated with the consumption of raw shellfish from a New Jersey harvest area, the Commissioner of the Department of Environmental Protection (or his designee) will suspend harvest in the affected harvest area under N.J.S.A. 58:24.

1.2. The NJDHSS will notify all receiving states and the FDA that a potential health risk is associated with shellfish from the implicated harvest area(s);

1.3. As soon as it has been accurately determined, the NJDHSS shall advise the FDA and receiving states which dealers have shipped shellfish from the implicated area during the 21 days prior to any event and thru the date of the harvest closure.

1.4. NJDHSS initiates and oversees the effectiveness of industry recall of any shellfish from the implicated area remaining in distribution.

1.5. If the NJDHSS investigation demonstrates that the illnesses are related to post-harvesting contamination or mishandling, SUSPENSION OF HARVEST IN THE AREA IS NOT NECESSARY and the suspension will be lifted.

1.6. Collect total Vp sampling of oyster tissue along with temperature and salinity data to run Vp Risk Assessment Model. When predicted risk level is less than 1 in 100,000 servings and no new outbreaks[2] , area can be reopened

1.7. The areas of harvest suspension will be patrolled to insure the cessation of harvest.

Figure 2 shows the process by which New Jersey would respond to the report of a *Vibrio parahaemolyticus* illness outbreak attributed to shellfish harvested from the State's waters.

[1]Illness outbreak as per the Model Ordinance is two or more cases.

[2]New means outbreak is not related to the same harvest area and time frame.

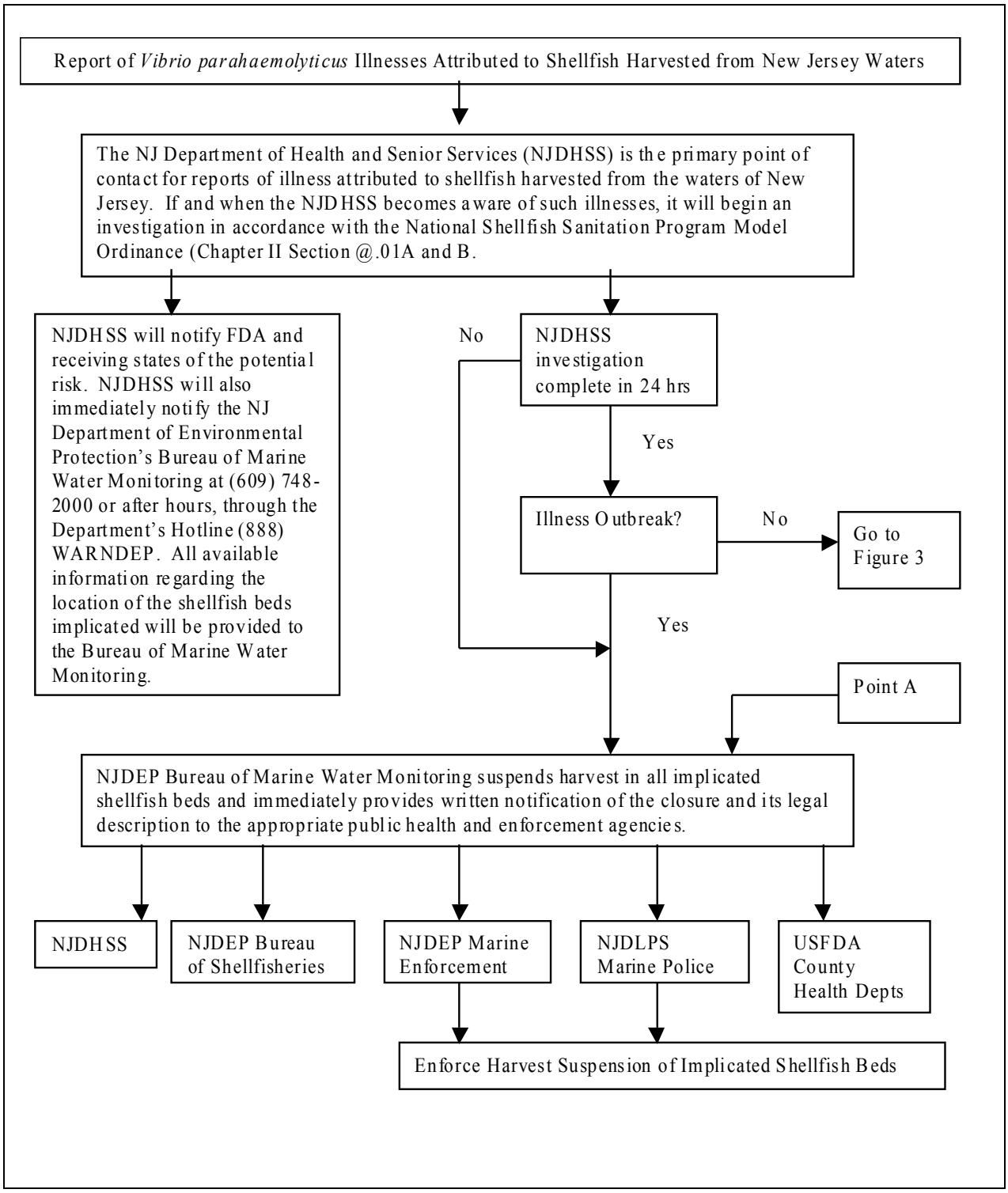

Figure 2. Flow diagram for responding to Vp Illness outbreaks.

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Post-harvest Temperature Control Measures

In order to minimize growth of *Vibrio parahaemolyticus* (Vp) that can occur under elevated temperature conditions following harvest, the conditions described below will be placed on harvest and handling of oysters from New Jersey waters in 2010. If Vp illnesses occur during 2010 attributed to oysters from a New Jersey shellfish growing area and if the subsequent NJDHSS investigation (ISSC Model Ordinance Chapter 2 @.01-B) shows that documentation exists that the conditions described below were met, this will satisfy the Model Ordinance (Chapter 2 @.01-D) condition for not closing the growing area through demonstration that the illnesses are related to post-harvest contamination or mishandling.

Daily Harvest Periods

The following Harvest Periods are to assure that oysters harvested for consumption are delivered to forced air refrigeration by no later than 2 PM during June 7th through September 4th. These restrictions are required for all commercial oyster harvest from NJ waters.

Harvest from subtidal waters

June 7 – Sept 4, 2010 Harvest can occur from Sunrise – 11 AM

Harvest from intertidal waters

Four hours will be allowed for harvest of oysters from the intertidal waters of New Jersey. The four-hour time period will begin after the first oysters to be harvested are exposed to the air by the receding tide.

Shading of the product must be in place on both the boat (N.J.A.C. 8:13) and during overland transport to the initial NJ certified dealer.

Off-loading of shellstock from boats directly onto interstate trucks intended for same day interstate shipment is prohibited.

No product is allowed to be shipped that same day it was harvested.

Survey instrument, annual evaluation of the forced-air unit owned by Certified Dealers:

1. Operating and in good repair
2. Unit is capable to hold a maximum day's harvest amount while providing adequate circulation of cold air
3. Unit is capable to hold day's harvest while holding other products
4. Compressor is sized adequately and can cool product down to (50) degrees F or less under Model Ordinance (40 degrees is optimum) in 12 hours (overnight).
5. NJDHSS requires verification of adequate refrigeration and cooling prior to certification.

Note:
Attached you will find resource information in order to assist your purchase and installation of a recording thermometer on your forced air unit. The cost is inexpensive to install this device. The New Jersey Department of Health & Senior Services will not certify the Certified Shellfish Dealer operation unless a recording thermometer is installed on your forced air unit. This will allow the Health Department to inspect and insure that your forced air unit is always up and running without question.

HACCP PLANS:

Certified Dealers shall record the time and the temperature of the product when it is offloaded and received by the Dealer. This can be done by utilizing a laser (infrared) thermometer (gun type) and "shooting" the temperature of the shell or by placing a probe thermometer between the shells and checking the meat.

After being held overnight and before releasing the product for interstate shipment you are to record the time released and the temperature of the product. Product shall not be released for intrastate and/or interstate shipment until 5a.m after overnight holding.

The implementation of the HACCP Plans includes monitoring records to indicate the time and temperature as indicated above, the establishment of Critical Limits and Corrective Actions when Critical Limits are Not Met.

Please alter your HACCP plan for your establishment to state that this will be performed.