Marine Finfish Aquaculture Licence under the Fisheries Act

Licensed for: Aquaculture

Date Issued: «DATE_ISSUED»

LICENCE No. «DFO_Prefix» «DFO_Lic_No» «YEAR»

Expiry Date: «EXPIRY_DATE»

ISSUED TO:
«LICENCE_HOLDER»
«CORPORATION ADDRESS»

This licence is issued under the authority of the *Fisheries Act* and confers, subject to provisions of the *Fisheries Act* and Regulations made there under, the authority to carry out aquaculture activities including cultivation and harvest of fish and prescribed activities under the conditions included herein and/or attached hereto.

It is the responsibility of the licence holder to obtain all other forms of authorization from federal or provincial agencies that may have jurisdiction for marine finfish aquaculture facilities. As well, it is the licence holder's responsibility to be informed of, and comply with, the *Fisheries Act* and the regulations made there under, in addition to these conditions.

The above licence holder is authorized by this licence to carry out aquaculture activities at the following location and for the following species:

<table>
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<tr>
<th>Facility Reference Number</th>
<th>Location and Legal Description</th>
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<tr>
<td>«REFERENCENUMBER»</td>
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<td>6    «SPECIES_6»</td>
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<td>7    «SPECIES_7»</td>
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**Combined Peak Biomass (tonnes):**
Site specific conditions:

«Section_B_Comment_1»

**Required Record Keeping and Reporting:** Details are contained within the attached conditions of this licence.

**Compliance Advisory:** No person carrying out any activity under the authority of this licence must contravene or fail to comply with any condition of this licence.

The licence holder is legally required to ensure that annual fees for this licence are paid each year not later than the anniversary date of this licence. The annual licence fee must be calculated as set out in section 3 of the *Pacific Aquaculture Regulations*.

A copy of this licence must be kept on site at the licensed facility and be available for inspection by a Fishery Officer or Fishery Guardian.

*This licence includes further conditions that are included herein and/or attached hereto. These conditions form part of the licence and may not be removed.*
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PART A. Definitions

“Absolute sea lice inventory” means the calculated total number of lice within a farm determined by multiplying fish number on the farm by the average lice count per fish;

“Attestation” means a written declaration made by a qualified individual who bears witness to, confirms or authenticates;

“Acoustical deterrent” means a device that is used underwater and is intended to generate an aversive response in marine mammals and for the purpose of this licence includes, but are not limited to, explosives, incendiary devices, and electronic sound recordings;

“Biofouling” means the organisms that attach and/or live on nets and other structures (excluding herring spawn);

“Broodstock” means fish used to generate gametes;

“Containment structures” means net pens, bag cages, tanks and similar structures used to contain finfish for the purposes of aquaculture;

“Containment structure array” means a group of containment structures physically attached to each other, or in the case of circular structures, up to a maximum of 60 m apart;

“Department” means Fisheries and Oceans Canada;

“Disease” means an abnormality of form or function and can be caused by a suite of infectious, non-infectious and inherent factors. Specifically:

  “Clinical disease” is a stage of the disease continuum that reflects anatomic or physiologic changes that are sufficient to produce recognizable signs of a disease;

  “Infectious disease” means a disease caused by the invasion and growth of a microorganism in or on a fish in such a way that it affects the form or function of that fish; and

  “Infectious outbreak” means an occurrence of disease in a population as determined by the attending veterinarian with the indicating morbidity or mortality rate substantially higher than its normal level;

“Evidence of escape” includes, but is not limited to, any visual or physical evidence that demonstrates a release of fish from the facility, including a significant decline in feed demand that is not otherwise explained or inventory discrepancies that are not otherwise explained;

“Facility” means the collective structures used for the purposes of aquaculture, including but not limited to, net pens, walkways, barges, floats and living accommodations plus associated lines and anchors;
“Fish Health Event (FHE)” means a suspected or active disease occurrence within an aquaculture facility that requires the involvement of a veterinarian and any measure that is intended to reduce or mitigate impact and risk that is associated with that occurrence or event;

“Fish health staff” means the designated personnel, with veterinary oversight, responsible for: identifying, managing, and minimizing the impact of risk factors; making health-related decisions; and routine monitoring of health, lice and disease parameters;

“Harvest” means removal of live fish for market;

“Harvest/transfer pens” means pens that are secured for less than 90 days to the main cage array for the purpose of feeding, handling, holding, harvesting or moving fish;

“High slack tide” means that point in time in any give location where the water depth has reached its maximum height (above chart datum) and any water movement has ceased, up until the current reverses direction;

“Incidental catch” means any wild fish from within the facility caught during harvest, movement of fish between or within facilities, or net removal;

“Licence holder” means the individual or corporation operating the facility;

“Marine mammal” includes cetaceans, pinnipeds and sea otters;

“Mortalities” means fish that have died within the containment structure array during a production cycle but does not include cultivated fish killed during harvest activities;

“Mortality event” means:
   (a) fish mortalities equivalent to 4000 kg or more, or losses reaching 2% of the current facility inventory, within a 24 hour period; or
   (b) fish mortalities equivalent to 10,000 kg or more, or losses reaching 5%, within a five day period;

“Pathogen” means a microorganism causing damage (pathology) in or on a fish. These include parasites, bacteria, rickettsia and viruses many of which are common and naturally present in the ecosystem;

“Peak biomass” means the maximum biomass of finfish within a facility during a production cycle;

“Production cycle” means:
   (a) the period of time from stocking the containment structures to the time of harvest or removal of all finfish, prior to the facility being restocked; or
   (b) for facilities containing broodstock, from the period of time immediately after a peak biomass up to and including the next peak biomass;
“Production site” means a facility where fish of the same age class are entered at the same time, grown and harvested until the site is empty but may also have broodstock kept continuously on site in dedicated pen(s) for breeding purposes;

“Qualified individual” means an individual employed by or contracted by an aquaculture corporation who possesses a combination of knowledge, expertise and experience necessary to complete a task;

“Sea lice abundance threshold” means three motile *Lepeophtheirus salmonis* per fish as determined by a minimum sample of 20 live fish from three pens. In the event three pens can not be sampled, calculate the mean sampling average with data available;

“Tonnes (t)” means 1000 kg;

“Transfer” means the movement of live fish to or from a licensed facility or hatchery;

“Year class” means the grouping of fish based on their time spent within the marine environment. Year class 1 represents a juvenile fish group that shares an approximate sea water entry date (e.g. within 4 months) plus the subsequent 12 months. Year class 2 refers to the fish group which remains in the sea water after the initial 12 month rearing period, but does not include broodstock.
PART B. Licence Conditions

Finfish Condition of Licence

1. Production

1.1 The combined peak biomass of cultivated fish within an authorized containment structure array must not exceed the amount set out on page 1 of this licence.

1.2 The licence holder must report peak biomass information as follows:
   
   (a) for production sites, the licence holder must submit to the Department, starting July 1, 2016 notification of the actual date and tonnage of the peak biomass event for each production cycle, for the term of the licence within 30 days of its occurrence;

   (b) for facilities with fish continuously on site, the licence holder must submit to the Department a notification of the actual date and tonnage of each peak biomass event for the term of this licence no later than January 15, 2017 and annually thereafter, and must include data from the previous calendar year.

1.3 The licence holder must submit to the Department starting July 15, 2016 and annually on the 15th of each month thereafter for the term of this licence:

   (a) a seven month rolling inventory plan for all licensed species using the template set out in Appendix I-A(i), including biomass, number of fish, age class and harvest activities at this facility. One month of the plan must reflect the calculated inventory at this facility for the previous month and the remaining six months must be the projected inventory. This plan will include data when no production is occurring; and

   (b) transfers to and from this facility for the previous month using the template set out in Appendix I-A(ii). This report is required only if transfers occurred.

1.4 The licence holder must complete the Population Harvest Declaration Form as set out in Appendix I-B which must accompany the harvested fish and be provided to the processor.

2. Transfer of Fish

2.1 Subject to section 2.3, the licence holder may transfer fish to this facility from another facility possessing a valid aquaculture licence issued pursuant to section 3 of the Pacific Aquaculture Regulations provided that the following conditions are met:

   (a) the fish are live Atlantic or Pacific salmonids;

   (b) the species of live salmonid are the same as those listed on the face of this licence;

   (c) transfers occur within the same Salmonid Transfer Zone as set out in Appendix II; and
(d) the licence holder has obtained written and signed confirmation, executed by the source facility’s veterinarian, fish health staff, or facility manager, that, in their professional judgement:

(i) mortalities, excluding eggs, in any stock reared at the source facility, have not exceeded 1% per day due to any infectious diseases, for any four consecutive day period during the rearing period;

(ii) the stock to be moved from the source facility shows no signs of clinical disease; and

(iii) no stock at the source facility is known to have had any diseases listed in Appendix III.

2.2 The original or a copy of the written and signed confirmation, described in section 2.1(d) must:

(a) be kept at this facility and available for inspection by the Department; and

(b) accompany all shipments of fish to and from this facility, except for movement of harvested fish.

2.3 From July 1, 2016 until further notice, the licence holder may not carry out transfers pursuant to section 2.1 herein. During that period the licence holder must apply to the BC Introductions and Transfers Committee to obtain an authorization to transfer fish.

2.4 For transfers of fish to this facility that are not authorized pursuant to section 2.1 the licence holder must possess a valid licence, obtained by applying to the BC Introductions and Transfers Committee, which will liaise with the appropriate Department licensing officials.

3. **Containment Array Requirements**

3.1 The licence holder must comply with the Containment Array Plan(s) attached to this licence with respect to location and containment structures. The containment structures at the facility may be less than that in the Containment Array Plan(s), but must not exceed it.

3.2 If the containment structure array is anchored for the first time or re-anchored, the licence holder must submit to the Department, prior to transferring fish to this facility, or within 30 days if fish are already on site:

(a) an attestation completed by a qualified individual(s) confirming that the facility infrastructure is installed in such a way and using such equipment as to withstand the oceanographic and meteorological conditions of the licensed location; and

(b) an accurate Containment Array Plan including locational information (+/- 10 m) for each corner of the containment structure array at high slack tide, and cage number.

3.3 The licence holder must notify the Department when planning to change from one approved containment structure array to another 10 days prior to transferring fish to this facility.

3.4 Harvest/transfer pens may be used in the same location for up to 90 calendar days. The licence holder must ensure that:
4. **Fish Health**

4.1 The licence holder culturing salmonids must comply with the Health Management Plan (HMP) as set out in Appendix IV. Any proposed amendments to the HMP will be considered a request for licence amendment by the licence holder to the Department.

4.2 Starting October 15, 2016 and annually on October 15th thereafter for the term of the licence, the licence holder culturing salmonids must submit to the Department, for its considered response:

   (a) the complete facility-specific proprietary Health Management Standard Operating Procedures (HMSOPs), with modified sections identified; or

   (b) inform the Department if no changes made to HMSOPs.

4.3 The licence holder must comply with carcass management, including mortality events as defined in Part A, as described in its salmonid HMP or, in the case of non-salmonid licence holders, as described in a separate Carcass Management Plan (CMP) attached as set out in Appendix IV-A.

4.4 The salmonid HMP or the non-salmonid CMP must include procedures for the following measures:

   (a) collecting, categorizing, recording, storing and disposing of fish carcasses, including:

      (i) the regular removal of carcasses to carcass storage containers;

      (ii) reporting to the Department as per sections 7.4 and 7.5;

      (iii) bio-security protocols;

      (iv) the secure location of stored carcasses while awaiting transfer to land-based facilities;

      (v) the procedures to prevent contents from leaking into receiving waters;

      (vi) the secure transfer of stored carcasses to land-based facilities; and

      (vii) the methods used to sanitize carcass storage containers, equipment and other handling facilities or vessels;

   (b) a mortality event procedure, which will include:

      (i) notification to the Department of a mortality event defined in Part A “Mortality Event” not later than 24 hours after discovery, providing as much detail as outlined in Appendix V-A;
(ii) not later than 10 calendar days after the mortality notification, submission to the Department a completed Appendix V-A, with subsequent update reports every 10 days thereafter if the specific mortality continues;

(iii) actions to handle the additional biomass on site associated with the mortality event of the magnitude defined in Part A of the licence; and

(iv) identification of vessels that will be used to collect and transport mortalities to on-land facilities in the case of elevated mortality events.

4.5 Should a Fish Health Event occur, the licence holder must:

(a) take immediate action to manage the event by implementing a response procedure to minimise the potential spread of pathogens if an infectious disease is diagnosed;

(b) undertake follow up measures to evaluate the Fish Health Event and the efficacy of the mitigation measures taken;

(c) submit a notification to the Department not later than seven calendar days after the event; and

(d) submit to the Department the therapeutic management measures as set out in Appendix V-B.

5. Fish Health Records

5.1 The licence holder must keep at this facility, unless otherwise indicated, complete, up-to-date and accurate written or electronic records of stocking and fish health activity for the facility. Records must include the following:

(a) stocking and fish health activity for the facility as set out in Appendix V-C; and

(b) the use of all therapeutants, pest control products and anaesthetics as set out in Appendix V-D.

5.2 The licence holder must ensure that Fish Health Event and carcass assessment records, in written or electronic form, are reviewed by the licence holder’s veterinarian and/or fish health staff to assess patterns in fish health and to facilitate reporting of “Fish Health Event” as per section 4.5(c) and “Mortality by Category” as per section 7.4.

6. Sea Lice Monitoring

6.1 The licence holder must follow a sea lice monitoring program in accordance with the monitoring protocols set out in Appendix VI.

6.2 Sampling of sea lice is not required when:

(a) a facility cultivating Atlantic salmon or trout is being harvested and there are fewer than four stocked containment structures with fish remaining; or

(b) fewer than 30 calendar days have passed since the completion of fish transfer to the third containment structure; or
the anaesthetic withdrawal time would delay the current rate of harvest; or

(d) fish have been medicated for sea lice within the previous 21 days; or

(e) fish are being medicated or otherwise managed for a fish health event; or

(f) an ongoing environmental issue would lead to additional fish stress or harm if handled.

6.3 Sampling of sea lice is required in three containment structures when four or more containment structures are actively being used to cultivate Atlantic salmon or trout. If less than four containment structures are actively being used to cultivate Atlantic salmon or trout, sampling is required in at least one containment structure.

6.4 Starting March 1, 2017, the licence holder must conduct annual sampling between March 1 and June 30 for the term set out in this licence. The licence holder cultivating Atlantic salmon and trout must carry out a sea lice abundance assessment every two weeks, at minimum, for fish held in containment structures for more than 30 calendar days. Where data collected in Appendix VI-A indicates the sea lice abundance threshold of three motile *Lepeophtheirus salmonis* has been exceeded, the licence holder must:

(a) within 15 calendar days of the discovery, implement a plan which will reduce the absolute sea lice inventory within the containment structure array; and

(b) notify the Department as per section 7.1 and 7.3.

6.5 Starting July 1, 2016, the licence holder must conduct sampling annually between July 1 and February 28 for the term set out in this licence. The licence holder cultivating Atlantic salmon and trout must carry out a sea lice abundance assessment once every month for fish held in containment structures for more than 30 calendar days. Where data collected in Appendix VI-A indicates the sea lice abundance threshold of three motile *Lepeophtheirus salmonis* has been exceeded, the licence holder must:

(a) increase monitoring to at least once every two weeks;

(b) within 30 calendar days of the first discovery, provide a plan to address the exceedance to the Department, for its considered response; and

(c) notify the Department as per section 7.1.

6.6 Starting July 1, 2016 the licence holder must ensure that sea lice monitoring is conducted quarterly, for the term set out in this licence, on cultivated Pacific salmon at the containment structure array. Sea lice abundance must be documented and available for review by a Fishery Officer or Fishery Guardian upon request. Should the average motile *Lepeophtheirus salmonis* exceed three lice per cultivated Pacific salmon, the licence holder must notify the Department as per section 7.3.

7. Sea Lice, Health and Mortality Reporting

7.1 The licence holder, cultivating Atlantic Salmon and trout, must submit to the Department starting July 15, 2016 monthly reports on the 15th of each month thereafter for the term of this licence as set out in section 6.4 and 6.5, using the template in Appendix VI-A.
7.2 Environmental data associated with the facility, as set out in Appendix VI-B, must be collected and maintained at this facility and made available to a Fishery Officer or Fishery Guardian upon request.

7.3 Starting March 1, 2017 to June 30, 2017 and annually every March 1st to June 30th period for the term of this licence, should the sea lice abundance threshold exceed three motile Lepeophtheirus salmonis per cultivated salmonid, the licence holder must report to the Department for its considered response, not later than seven calendar days after the discovery:

(a) the abundance results of the sea lice monitoring; and

(b) the plan as outlined in section 6.4 including actions and management response to be initiated.

7.4 The licence holder must record “Mortality by Category” for fish within the containment array. The reports must be submitted to the Department, not later than July 15, 2016 and every three months thereafter for the term of this licence, as set out in Appendix V-B. A report is required for all facilities in operation.

7.5 July 1, 2016 and quarterly thereafter for the term of the licence, the licence holder must maintain and submit to the Department, records of all wild or enhanced fish mortalities collected during routine carcass recovery, following the template set out in Appendix VII.

8. Escape Prevention, Reporting and Response

8.1 The licence holder must have in place and follow an Escape Prevention and Response Plan including all elements outlined in Appendix VIII to prevent the escape of cultivated fish.

8.2 If an escape or a suspected escape of cultivated fish from the containment structure array occurs, the licence holder must take immediate action to prevent further escapes.

8.3 The licence holder must notify the Department of any escape or evidence of escape of cultivated fish from this facility within 24 hours after discovery. The notification must include the date and time of escape and any therapeutants administered through feed as set out in Appendix IX.

8.4 The licence holder must submit to the Department a complete follow-up report, as set out in Appendix IX not later than seven calendar days after the escape or suspected escape.

9. Incidental Catch

9.1 The licence holder must design and use nets and other gear or equipment in a way that reduces the risk of incidental catch, and causes the least amount of harm to incidental catch.
9.2 Unless otherwise directed by the Canadian Food Inspection Agency or the Department, the licence holder must ensure that any live incidental catch are immediately returned to waters outside the aquaculture facility in a manner that causes it the least harm.

9.3 The licence holder must retain all dead incidental catch and dispose of them in the same manner that cultivated stock carcasses are disposed of, as set out in section 4.4.

9.4 The licence holder must maintain incidental catch records as set out in Appendix VII and must submit to the Department in the following manner:
   
   (a) for facilities that have fish continuously on site, a report must be submitted on January 15, 2017 and annually every January 15\textsuperscript{th} thereafter for the duration of the licence. Records from the previous calendar year must be included; or
   
   (b) for all other facilities, a report must be submitted within 15 calendar days of the final date of harvest that includes all records generated during the production cycle. The licence holder must submit a follow-up report if more incidental catch and/or herring spawn is discovered after all containment nets are removed.

10. Management of Marine Mammal Interactions

10.1 The licence holder must have in place and follow a Marine Mammal Interaction Management Plan that includes all the elements of Appendix X.

10.2 Marine mammal acoustical deterrents must not be used.

10.3 Upon discovery of a live entangled marine mammal, the licence holder must make all reasonable attempts to free the marine mammal without harm.

10.4 The licence holder must notify the Department of any marine mammal drowning mortality or entanglement (live or dead) not later than 24 hours after discovery. The notification must include the date and time of discovery and as much of the detail set out in Appendix XI-A as possible.

10.5 Not later than seven calendar days after the initial notification pursuant to section 10.4 the licence holder must submit to the Department a complete follow-up report of any marine mammal drowning or entanglement (live or dead), using the template set out in Appendix XI-A.

10.6 In the event that deterrence efforts fail, the licence holder is authorized to dispatch harbour seals and California sea lions which are within 30 m from the edge of any net pen associated with the containment structure array, and:
   
   (a) are within or attempting to enter the containment structure array; and
   
   (b) that represent an imminent danger to aquaculture equipment and infrastructure, the safety of persons in the facility or the fish cultivated in the facility.

10.7 Only employees and/or agents of the licence holder who meet all of the following qualifications may dispatch harbour seals or California sea lions pursuant to section 10.6:
(a) possess a valid Federal Possession and Acquisition Licence (PAL) issued under the *Firearms Act* and are able to produce it upon demand by a Fishery Officer or Fishery Guardian; and

(b) carry photo identification and current contact information, and additionally, in the case of an agent, the name of the business, business owner, business licence number, current contact information and produce it upon request by a Fishery Officer or Fishery Guardian.

10.8 All firearms used to dispatch harbour seals or California sea lions must have a muzzle velocity of not less than 1,800 feet per second, and a muzzle energy of not less than 1,100 foot pounds. Ammunition must be factory produced and the box available for inspection. The use of hand loads is not permitted under the authority of this licence.

10.9 If a harbour seal or a California sea lion is shot under the authority of this licence, every reasonable attempt must be made to retrieve it and ensure that it is dead.

10.10 As soon as it is practical, the licence holder must make all reasonable efforts to recover every harbour seal or California sea lion killed under the authority of this licence and must, for every harbour seal or California sea lion that is retrieved, dispose of the carcass in accordance with applicable Federal, Provincial, and Municipal legislation.

10.11 The licence holder must:

(a) record and notify the Department of any shooting or retrieval efforts of a harbour seal or California sea lion not later than 24 hours after the event as set out in Appendix XI-B; and

(b) submit to the Department a complete report in accordance with Appendix XI-B, no later than seven calendar days after any shooting of a harbour seal or California sea lion of this licence.

11. **Protection of Fish Habitat**

11.1 The installation and removal of this operation is authorized under section 35(2)(a) of the *Fisheries Act*.

11.2 The licence holder must maintain records at this facility of in-water net cleaning for the purposes of biofouling removal, as set out in Appendix XII.

11.3 The licence holder must ensure that only anchoring equipment is in contact with the sea bed.

11.4 The licence holder must collect and retain, with minimal leakage, blood generated during harvest and dispose of it at a licensed processing facility.

11.5 The licence holder must ensure all debris generated or used at this facility is collected or treated and disposed of in accordance with applicable Federal, Provincial, and Municipal legislation.
12. Operation of Vessels

12.1 The licence holder must post signage directing all vessels not involved in the cultivation of fish to dock at the designated docking station.

12.2 The licence holder must monitor and post restricted use signs in those areas where vessels not involved in the cultivation of fish are not permitted access.


13.1 Starting January 25, 2017 and annually on January 25th thereafter for the term of this licence, the licence holder must complete and submit to the Department the Annual Aquaculture Statistical Report as set out in Appendix XIII for the previous calendar year.

14. Use of Lights

14.1 The licence holder may use lights to promote fish growth and alter fish physiology and must record the following:
   (a) type of lights used;
   (b) the intensity of lights used;
   (c) the number of lights used; and
   (d) dates and times when the lights are used (period of day; season).

14.2 Starting February 15, 2017 and annually on February 15th thereafter for the term of this licence, the licence holder must submit to the Department annual light use reports summarizing results from section 14.1 for the previous calendar year.

15. Administrative Matters

15.1 Unless otherwise noted under specific conditions of this licence, the licence holder must keep all records required by these conditions in the following manner:
   (a) with respect to duration:
       (i) at this facility for the duration of the production cycle; and
       (ii) in a suitable location, at this facility, in a corporate office, or other accessible storage off-site for a minimum of four additional years;
   (b) accessible, legible and protected from damage; and
   (c) in either electronic or paper versions.

15.2 Unless otherwise noted in specific licence conditions, all reports and submissions required by this licence must be submitted to the Department as follows:
(a) AQFF.General@dfo-mpo.gc.ca for reports required from sections 1, 3, 9, 11 and 14 of this licence;
AQFF.FishHealth@dfo-mpo.gc.ca for all reports required from sections 2, 4, 5, 6 and 7 of this licence;
AQFF.FishEscapes@dfo-mpo.gc.ca for all reports required from section 8 of this licence;
AQFF.MarineMammals@dfo-mpo.gc.ca for all reports required from section 10 of this licence;
fishstats@dfo-mpo.gc.ca for all reports required from section 13 of this licence;

(b) when notified, please submit to the following updated email addresses:
DFO.AQFFGeneral-AQFFGénéral.MPO@canada.ca for reports required from sections 1, 3, 9, 11 and 14 of this licence;
DFO.AQFFHealth-AQFFSanté.MPO@canada.ca for all reports required from sections 2, 4, 5, 6 and 7 of this licence;
DFO.AQEScape-AQÉchapper.MPO@canada.ca for all reports required from section 8 of this licence;
DFO.AQFMammals-AQFFMammifères.MPO@canada.ca for all reports required from section 10 of this licence;
DFO.AASR-RSSA.MPO@canada.ca for all reports required from section 13 of this licence; or

(c) to the Departmental aquaculture database.
APPENDIX I-A(i) INVENTORY PLAN

All sections of this appendix must be completed unless otherwise directed in applicable licence conditions or by the Department.

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<th>Facility Ref. #</th>
<th>Fish Species</th>
<th>Previous Month</th>
<th>Current Month</th>
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LEGEND (Colour Indicates Status and Year Class)

- Harvest
- Fallow
- Year 1
- Year 2
- Brood

Transfers (see transfer details in Appendix I-A(ii)

[Image of AQUACULTURE MANAGEMENT logo]

Date of Submission: _________________

Fisheries and Oceans Canada
Pêches et Océans Canada
APPENDIX I - A(ii) DETAIL OF MONTHLY STOCK TRANSFERS

All sections of this appendix must be completed unless otherwise directed in applicable licence conditions or by the Department.

<table>
<thead>
<tr>
<th>Company Name:</th>
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<tbody>
<tr>
<td>Month/Year:</td>
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<thead>
<tr>
<th>Introductions &amp; Transfers (I&amp;T) Licence #</th>
<th>Species</th>
<th>Date(s) of Transfer</th>
<th># Fish Transferred</th>
<th>Facility Name</th>
<th>Facility Reference #</th>
<th>Fish Health Zone (see Appendix I-A(iii))</th>
<th>Facility Name</th>
<th>Facility Reference #</th>
<th>Fish Health Zone (see Appendix I-A(iii))</th>
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APPENDIX I-A(iii) FISH HEALTH ZONES
APPENDIX I-B POPULATION HARVEST DECLARATION FORM

All sections of this appendix must be completed unless otherwise directed in applicable licence conditions or by the Department

PART A.

Company Name:

Address:

Phone number:

Aquaculture Facility Number:

<table>
<thead>
<tr>
<th>Fish ID or Lot #</th>
<th>Date of Harvest</th>
<th>Fish Species and Common Names</th>
<th>Quantity Shipped (pieces)</th>
</tr>
</thead>
</table>

Name of Market Venue, Distributor, Next Grower, or Processor:

PART B. Details of Drug/Chemical Treatment While Fish in this Lot Held at the Licence Facility

Details of Last Drug/Chemical Treatment:

1. Name of Drug and Prescription No. (if any)
2. Date Treatment Commenced
3. Date Treatment Ended
4. Treatment Information (withdrawal time prescribed, how applied to animals (in-feed or bath), amount per Kg of feed, etc.)

Treatment file and details are available at rearing site: Yes No

5. Name of Prescribing Veterinarian

<table>
<thead>
<tr>
<th>Name of Person Responsible for Administering the Treatment</th>
<th>Signature of Person Responsible for the information of this declaration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Date:</td>
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</table>

This form may be used by a licence holder or their agent to satisfy the information requirements specified in licence condition 1.4 concerning shipping of fish/seafood to a market venue or processing plant. This form must accompany the fish/seafood and must be retained by the market or processing licensee for a period of one year. Please note that this form must be submitted even if there has been no drug treatment of the animals in the shipment.
Salmonid Transfer Zones

Salmonid Transfer Zones in British Columbia

Legend
- Salmonid Transfer Zone Boundary

Produced by DFO Aquaculture Management Division
Last updated: 17-10-2016
This map is for information only and is not to be used for navigational purposes. For more information, see

1:1,500,000
Coordinate System: NAD 1983 BC Environment Albers
APPENDIX III  DISEASES OF REGIONAL, NATIONAL OR INTERNATIONAL CONCERN

The diseases and pathogens listed below are considered either exotic to British Columbia (BC) or, such as IHN that is known to exist in BC, have the potential to emerge from the ecosystem in the Pacific region. These diseases can severely impact fisheries and affect regional and national trade so they warrant urgent notification and immediate attention.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Causative Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious Hematopoietic Necrosis (IHN)</td>
<td>Infectious hematopoietic necrosis virus (rhabdovirus)</td>
</tr>
<tr>
<td>Infectious Pancreatic Necrosis (IPN)</td>
<td>Infectious pancreatic necrosis virus (birnavirus)</td>
</tr>
<tr>
<td>Viral Hemorrhagic Septicemia (VHS) – other than the endemic VHS Genotype IVa</td>
<td>Viral hemorrhagic septicemia virus (rhabdovirus)</td>
</tr>
<tr>
<td>Infectious Salmon Anemia (ISA)</td>
<td>Infectious salmon anemia virus (orthomyxovirus)</td>
</tr>
<tr>
<td><em>Oncorhynchus masou</em> Virus Disease (OMV)</td>
<td><em>Oncorhynchus masou</em> virus (herpes virus)</td>
</tr>
<tr>
<td>Any other filterable replicating agent causing cytopathic effects in cell lines specified by the Minister or is causative of identifiable clinical disease in fish</td>
<td></td>
</tr>
<tr>
<td>Whirling Disease</td>
<td><em>Myxobolus cerebralis</em></td>
</tr>
<tr>
<td>Cold Water Vibriosis (Hitra disease)</td>
<td><em>Vibrio salmonicida</em></td>
</tr>
</tbody>
</table>
Appendix IV

Salmonid Health Management Plan (HMP)
of [corporate entity name]

[NB. This template is designed to facilitate the principles of HMPs applicable to a number of cultured finfish types or facilities - aspects common to: salmonids, non-salmonids (eg. sablefish), marine open-water netpens, fresh open-water netpens, marine solid-wall arrays].

To complete, the Licence Holder will:

1. fill-in names/items highlighted in blue,
2. in some paragraphs, select or delete the applicable item in blue,
3. remove the “Template” watermark,
4. remove all yellow highlights, and
5. adjust the footer (pages 2 to 12) to reflect the latest update.

Template updated May 2016. Fisheries and Oceans Canada, Aquaculture Management Division (DFO- AMD) of British Columbia
1 OBJECTIVES, PERSONNEL & EXECUTIVE SUMMARY

The Health Management Plan (HMP) submitted to Fisheries and Oceans Canada as part of both the Marine and Freshwater/Land-based Finfish Aquaculture Licences serves three purposes: i) to outline good health conditions for cultured finfish raised by [corporate entity name] within the [marine] [freshwater/land-based] ecosystem; ii) to reflect a commitment by [corporate entity name] to comply with the principles, concepts, and required elements of fish health management when culturing finfish or gametes thereof in, or destined for, the marine environment, unless otherwise depicted by site-specific conditions of licence (i.e. culturing finfish in any open-water ecosystem) and; iii) to be used by [corporate entity name]’s facility staff for training and for day-to-day interaction with the fish, and by other fish health staff who are responsible for maintaining and monitoring good health status of the fish, and by the Licence Holder’s Health Management Team who makes decisions related to fish health.

This document forms one of two components of [corporate entity name]’s overall Health Management Plan (HMP): i) concepts; and ii) proprietary Standard Operating Procedures (SOPs). As an appendix of the Finfish Aquaculture Licence, this document is the publicly available component and commits [corporate entity name] to ensure and maintain the health and wholesomeness of its cultured finfish. It also commits [corporate entity name] to abide by four key principles of the management of health:

1. Characterizing the health status of the animal population
2. Identifying and managing risks
3. Reducing exposure to disease-causing agents
4. Judicious application of chemicals and drugs

Functionally, this document applies to [corporate entity name]’s open-water containment arrays (net pens or solid wall) [and to open-water body broodstock-rearing facilities, when present]. A number of health concepts herein may refer to an SOP that coincides with other health concepts (eg. both biosecurity and fish handling may refer to the same net changing SOP (eg. SOPs of sections 3 and 7), common to both concepts. In addition, SOPs may be identified as either site-specific or practiced at all Licence Holder’s facilities.

The proprietary SOPs cited in this HMP document are initially submitted in their entirety to Fisheries and Oceans Canada’s Aquaculture Management Division (DFO-AMD) for review and response. Annually thereafter a complete facility specific proprietary Health Management Standard Operating Procedures (HMSOPs), with sections modified in the previous calendar year identified, to be submitted for Departmental review and response. If no changes were made in the past calendar year the Department to be advised and no submission required.

[Yellow highlights in this template depict tangible indicators of each concept easily verified and inspected].
1.1 Personnel Duties and Responsibilities

1.1.1 Veterinarian

[Corporate entity name]’s attending Veterinarian (either staff or private contract vet), in conjunction with fish health staff, has agreed to be responsible in overseeing matters of fish health management for [corporate entity name]. The Veterinarian is licensed in BC and fosters a lawful Veterinarian-client-patient relationship with the Licence Holder. The Veterinarian is responsible for disease diagnoses, interpretations, and writing prescriptions and is expected to exercise good medical judgment in matters of fish health. Veterinary contact information is posted and available to on-site fish health staff.

1.1.2 Fish health manager / technicians / team

Job descriptions for the Fish Health Manager, Fish Health Technicians, Fish Health Biologist and other positions are available at the Head Office of [corporate entity name]. This “Fish Health Management Team” refers to those persons, including the Veterinarian, who are responsible for major fish health decisions. The Team is responsible for identifying and managing risks in an attempt to maximize fish health.

1.1.3 Facility staff play a role

As per conditions of licence, all facility staff have read and abide by this HMP and relevant operational SOPs, signed-off, and practice appropriate hygienic procedures supportive of fish health. General farm staff may be assigned specific fish health duties from time to time.

1.1.4 Contact names and numbers

Contact names and numbers for key fish health personnel, including emergency numbers for regulatory authorities and services, are posted in readily accessible location(s) at each facility.

2 HEALTH CONCEPTS & REQUIRED ELEMENTS

2.1 Biosecurity

Disease-causing agents (pathogens) may be spread by sick fish (wild or cultured) through the water, on shared equipment, other animals, or inadvertently by personnel, visitors or their personal gear. Entrance of potential pathogens is minimized by supporting an effective biosecurity “barrier” at each facility. Biosecurity measures apply to all personnel, visitors, divers, suppliers, regulators, vessels, and all equipment. Biosecurity has three main goals: keeping fish healthy, keeping pathogens out, and keeping disease from spreading. See the heading below: “Keeping Pathogens Out” for operational SOPs.

2.2 Keeping Fish Healthy

Keeping fish as healthy as possible is critical in preventing disease from arising at the containment facility, and/or from spreading within a facility.
2.2.1 Single year-class farms
Containment arrays (i.e. production farms, not including broodstock holding facilities) ideally contain a single year-class of finfish livestock to minimize the transmission of pathogens between age classes of fish. In other words, an ‘all stock in; all stock out’ approach is encouraged. However, due to siting or production limitations [corporate entity’s name] is acknowledged by the Department to raise multi-year-class fish at this specific location.

2.2.2 Suitable rearing environment and security
[Corporate entity name] is responsible for ensuring a suitable rearing environment for the fish so they remain healthy. Requirements related to materials used in the construction and maintenance of rearing units provide security and minimize risk of potential escape or harm to fish. Active facilities are staffed daily or are locked, alarmed, secured or otherwise monitored to control entry and deter vandalism. Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.2.3 Normal fish behaviour is observed
Fish are routinely monitored for signs of normal health and disease. All staff are familiar with normal fish appearance and behaviour. Early detection of altered activity is key to maintaining health and disease management so changes in behaviour and physical condition are logged and reported to facility managers upon discovery. To minimize stress and mortality, fish are held at cost-effective, species-specific densities.

2.2.4 Predator control
Predators include birds, other fish, and mammals. Reasonable, due diligent attempts are made to exclude predators from the facility and from interacting with the fish. As detailed and required in the conditions of licence [corporate entity name] follows mitigation procedures striving toward minimal predator interaction with the cultured fish. Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.2.5 Feed and nutrition
The objective of good nutrition is to optimize fish health and growth so fish receive sufficient quantity and quality of feed. [Corporate entity name] has procedures in place for healthy, hygenic delivery of feed to fish. Proper storage of feed is essential to maintaining its nutritional quality. Feed is stored in structures designed to minimize spillage, spoilage, and wildlife’s access to feed. Feed is also protected from extremes of heat, sunlight and moisture. Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.
2.3 Fish Handling Techniques

2.3.1 Routine handling techniques
[Corporate entity name]’s fish handling procedures - including types of equipment used and equipment maintenance - are designed to minimize stress, injury, escape and predisposing fish to disease. Observing fish during handling, and for a period after handling, ensures any negative effects are noted and steps are taken to mitigate impact. Staff minimize the time fish are exposed to stressful events such as crowding and out-of-water events (i.e. moving, counting, grading, tagging, injecting, etc.). Each handling event is logged.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.3.2 Harvesting
If fish are being live-hauled to a processing plant measures are taken to minimize their stress during handling and transport. If fish are stunned and bled at the containment array they are stunned using humane procedures. Stress reduction is practiced to as great a degree as possible. [Corporate entity name]’s specific slaughter objectives and conditions vary yet specific harvest procedures (i.e. seine, brail, pump, etc.) are detailed in the SOP. Blood water is contained to the best of [corporate entity name]’s ability to minimize leakage. For specific diseases of concern, eg. IHN viral infections, special harvest SOPs apply.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.4 Monitoring Water Quality
[Corporate entity name] routinely monitors and records water quality parameters at its facilities to ensure optimal fish health. Monitoring varies between specific licence holdings depending on location and hydrographic specifics of the local environment yet dissolved oxygen, water clarity, and temperature monitoring are minimal requirements.

2.4.1 Contingency plans
[Corporate entity name] maintains a contingency of procedures in the event of deterioration of water quality and procedures vary depending on cause. Cessation of feeding is immediate. Water quality monitoring is enhanced to determine the problem and to estimate how long the problem may persist. Fish are monitored more closely for the duration of the event and will not be handled until water quality is deemed acceptable. Records of these events, findings and actions are kept.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.5 Keeping Pathogens Out
Reasonable and necessary precautions are taken to mitigate infections at the facility. Often pathogens indigenous to the ecosystem are difficult to exclude from open or semi-open ecosystems but the development of disease can be minimised or prevented.
2.5.1 Personnel / Visitor / Diver / Supplier movement
Where possible, personnel and visitors avoid travel between [corporate entity name’s] containment arrays. If such travel is unavoidable, personnel and visitors adhere to all biosecurity procedures at each facility. Procedures are posted or explained to all visitors as part of the visitor log-in event. Suppliers are advised of containment array procedures and delivery-order in advance. Suppliers attending multiple facilities may be denied access. Staff will notify suppliers [and divers] if any specific disease of concern arises. Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.5.2 Equipment / Vehicle movement
Where possible, [corporate entity name] equipment is not shared between containment arrays. This includes fish handling equipment, vehicles, feeding, monitoring and other equipment. Equipment is kept as clean as possible at all times to prevent possible spread of pathogens; it is cleaned and disinfected after each use and re-stored to its proper location. Equipment drying is also practiced when possible. Items which must be used at more than one facility are subject to biosecurity and disinfection measures. Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.5.3 Moving fish between facilities
Transferring fish between culture facilities is minimized; however, due to siting or production objectives [corporate entity’s name] may relocate fish provided required licences issued by the Introductions and Transfer Committee are obtained in advance, carried during transport, and filed at both source and receiving facilities. Particular care is taken to avoid undue fish stress, transmission of pathogens, or the possibility of escape. [Where well-boats are used, water quality is closely maintained and monitored to minimize stress during transport.]
Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

2.6 Monitoring Fish Health and Disease
[Corporate entity name]’s fish are monitored at least once daily for any unusual behaviour, visible lesions or other signs of illness. Changes in behaviour and physical condition are reported to management or fish health staff. Water quality is also routinely monitored (as above).

2.6.1 Carcass collection
Mortality is natural in all populations. All efforts are made by [corporate entity name] to minimize infection and disease within a containment array. Optimal hygiene, disinfection, and carcass collection helps to maintain population health. Carcasses are collected, classified and recorded on a routine and frequent basis to minimize the potential spread of pathogens and to minimize the attraction of predators. If mass mortality arises, it is managed according to licence conditions and its specific SOP.
2.6.2 Carcass classification
Carcasses are examined for obvious cause(s) of mortality and/or signs of disease. As detailed and required in the conditions of licence, [corporate entity name] records and reports the classifications of mortality at least as follows, and the Fish Health Management Team of [corporate entity name] is notified of any unusual counts or types of lesions / mortality:
- Environmental (oxygen, water quality, storms, entrapment, nutritional)
- Fresh “silvers”
- Handling or transport damage (trauma)
- Maturation
- Old (decomposed)
- Poor performers
- Predator attack
- Dead wild finfish carcasses (number and type, eg. herring-like, rockfish-like, etc.)

Diagnostic sampling is conducted as per [corporate entity name]’s procedures, or upon instruction by the Veterinarian, the Fish Health Management Team, or the Department (DFO-AMD), and recorded and reported as per licence.

2.6.3 Specific fish health procedures

2.6.3.1 Anaesthetizing and sedating fish
A variety of fish health procedures require that fish be sedated or anaesthetized for welfare and to minimize stress. Registered anaesthetics are obtained through a veterinarian. Anaesthetized fish are monitored closely at all times. Adequate water quality of the anaesthetic bath, in particular available dissolved oxygen, is maintained.

2.6.3.2 Sea lice monitoring (Marine licences only)
Sea lice abundance (i.e. counts) requires monitoring to make effective control and management decisions; requirements are detailed in conditions of licence.

2.6.3.3 Vaccinating fish
Vaccines are administered occasionally at containment arrays and form part of an integrated fish health management program. Vaccines are biologic substances that are stored (refrigerated), handled, and applied as per manufacturer’s instructions. [Corporate entity name] staff are appropriately trained prior to undertaking a vaccination procedure.
2.6.3.4 Euthanasia
In the uncommon event where numerous fish are euthanized (eg. to facilitate specific fish measurements, sampling, mercy-killing, or culling), it is recorded and conducted in as humane a manner as possible, facilitating a rapid and irreversible loss of consciousness.

2.7 Fish Health Records
Many records are computerized and form part of the integrated licence holder record-keeping system. Backups are maintained. [Corporate entity name] provides adequate system training and documentation to authorized facility personnel, including data entry and report creation. Record-keeping, storage, reporting and [corporate entity name]’s Fish Health Management Team review is followed as per conditions of licence.

2.8 Fish Disease Outbreaks / Emergency
A fish health emergency is any situation where the health of a fish population is suddenly at risk. This may be due to disease-causing agents (such as a pathogenic virus) or to abrupt water quality changes (such as plankton blooms, a toxin, or a sudden, severe decline in dissolved oxygen). Vigilant monitoring, recording and early detection is key to good management of health emergencies.

An outbreak is defined as an unexpected occurrence of mortality or disease. Not all outbreaks are infectious or fish health emergencies. Infectious diseases may differ in how contagious they are and therefore how easy or difficult they are to control. Rapid response is essential but will be determined on a case-by-case basis in conjunction with the Veterinarian, the Fish Health Management Team, and/or by regulatory authority. Once an outbreak / emergency has been recognized, specific steps are followed. The objective is to keep the pathogen concentration (or load) as low as possible and to prevent spread of the problem within or off the facility. Biosecurity is enhanced.

2.9 Escaped Medicated Fish
The requirements and procedures related to fish escapes are conditions of licence. In the unlikely event of large, medicated, cultured fish escaping from the containment array (i.e. those with drug residues), [corporate entity name]’s facility staff will immediately inform their Veterinarian and Fish Health Management Team who, in turn, will contact the Department Veterinarian(s) of DFO-AMD as soon as possible to facilitate the potential need of a general fisheries advisory and/or closure.
2.10 Handling Drugs and Chemicals

Fish health and survival is sometimes optimized with judicious use of veterinary prescribed therapeutants. The Veterinarian attending [corporate entity name] maintains a veterinarian-client-patient relationship to facilitate diagnoses and prescription treatments. These decisions are taken considering both the welfare of fish and the ecosystem.

2.10.1 Medicated feed storage, administration and inventory

Medicated feed, if used, is stored in clearly marked bags, easily distinguishable from non-medicated feed. The medicated feed is inventoried and recorded daily as the feed is offered to the fish according to prescription. A Material Safety Data Sheet (MSDS) for all medications used at the facility is on-site and readily accessible. [Corporate entity name] ensures that all chemicals are handled safely by appropriately trained staff, taking suitable precautions.

2.10.2 Treatment records

As per conditions of licence specific and detailed records of medicated feed administration are kept on-site for the entire time the fish are present. In combination with inventory records, the fish groups that were treated are readily identifiable through treatment and withdrawal times. A copy of the treatment history will accompany the target fish to another containment array if the fish are subsequently moved. [Corporate entity name] does not harvest fish until they have cleared the withdrawal period prescribed by the Veterinarian. As per regulations and licence, when fish are delivered to a processing plant a Population Harvest Declaration accompanies harvest fish to ensure seafood safety and wholesomeness.

2.10.3 Chemicals and Biologicals

2.10.3.1 Disinfectants, chemicals, and biologicals

Disinfectants and chemicals are stored in clearly marked containers. An MSDS for each disinfectant at the facility is on-site and readily accessible. [Corporate entity name] ensures that all chemicals are handled safely by appropriately trained staff, taking suitable precautions.

Biologicals include vaccines. Where applicable, these products are stored refrigerated and handled as per manufacturer’s instructions. A product insert for each vaccine at the facility is on-site and readily accessible.
3 BROODSTOCK – SPECIAL CONSIDERATIONS

Broodstock may be held at marine, brackish, or freshwater facilities. All fish health aspects of this HMP appendix apply (e.g., biosecurity, routine monitoring, treatments, emergencies, records) though they differ between saltwater and freshwater facilities. For example, water quality monitoring and contingency planning will differ between marine and freshwater broodstock sites.

3.1 Suitable Rearing Environment

[Corporate entity name] is responsible to provide a suitable, safe and secure rearing environment. Escape and predation prevention is essential.

3.2 Feed and Nutrition

Broodstock often require specially formulated diets to meet their nutritional requirements prior to full maturation. Broodstock feeding strategies differ from those of production fish, particularly as they begin to mature and stop feeding. Proper storage of these diets is essential to maintaining their nutritional value; feed is stored in structures designed to minimize spillage, spoilage, and wildlife’s access to feed; feed is also be protected from extremes of heat, sunlight and moisture.

3.3 Biosecurity

[Corporate entity name] raises mature broodstock for a period of time longer than production fish. Where possible, designated staff and equipment are selected to interact with broodstock. Strict disinfection and hygiene procedures are in place. At freshwater facilities shared by other fish year-classes, biosecurity is particularly vital to prevent the transfer of pathogens from the mature fish to susceptible young fry.

To minimize two-way transmission of disease, mature broodstock are held at a designated facility or in a portion of a facility, removed from production or hatchery fish. Broodstock in freshwater may use a separate water supply.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

3.4 Selection and Handling

Broodstock are handled individually at least once. Aquaculture facility personnel select broodstock for specific traits, and all broodstock are sorted by sex and for “ripeness”, i.e. whether or not they are fully mature. Handling individual brood fish is be done with care and with minimal stress to prevent negative effects on gametes (eggs and milt). Anaesthesia and sedation is used to minimize time and exposure to anaesthetic compounds, and to provide gentle handling and recovery.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.
3.5 Medications
Broodstock are medicated for specific infections prior to maturation, particularly for those infectious pathogens that may be transmitted “vertically”, i.e. from parent to egg. The type and timing of applied medications is determined by [corporate entity name]’s Veterinarian and Fish Health Management Team. The medications are used according to prescription and are inventoried and recorded daily. A Material Safety Data Sheet (MSDS) for all medications used at the facility is on-site and readily accessible. [Corporate entity name] ensures that all medications are handled safely by appropriately trained staff, taking suitable precautions.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

3.6 Egg and Milt Collection
Egg and milt collection is conducted in as hygienic a manner as possible to prevent transmission of pathogens to other broodstock or progeny. Brood fish are anaesthetized and gametes are harvested. Females are euthanised in a humane manner. Males, if used for multiple egg takes, are monitored for recovery from anaesthesia and returned to holding unit(s). Proper hygiene and disinfection is practiced.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

3.7 Disease Screening
Disease screening procedures are conducted at the time of spawning to mitigate risk of vertical transmission of pathogens to progeny. Tests performed are at the discretion of the Veterinarian but may include: screening for BKD (female broodstock) [and viral screening]. Additional testing may be performed at the discretion of the Veterinarian. Samples for disease screening are collected using aseptic technique. The location of progeny from sampled fish is tracked until such time the screening results are received and reviewed by the Veterinarian and/or Fish Health Management Team.

3.8 Egg Disinfection
Eggs are safely disinfected following fertilization and water hardening. This disinfection is conducted either at the Broodstock facility or once the gametes enter the hatchery.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

3.9 Egg (and/or Milt) Transportation
Pre-arranged permits are required when eggs or milt are transported and permits must accompany the gametes during transport. Transport occurs in clean, labelled containers with secure lids. Strict disinfection and biosecurity procedures are followed to prevent transmission of pathogens from the broodstock facility to the hatchery.
Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

3.10 Identifying Progeny
Female brood are labelled and corresponding eggs are clearly labelled to match (by date and parents or batch of parents).

3.11 Records
Records are kept for egg-take and broodstock pathogen screening. Records accompany each shipment of eggs from the broodstock facility to the hatchery receiving the eggs, whether destined for on-site or off-site incubation.
APPENDIX IV-A CARCASS MANAGEMENT PLAN (for marine non-salmonids)

Monitoring Fish Health, Disease and Mortality

[Corporate entity name]’s live fish are monitored at least once daily for any unusual behaviour, visible lesions or other signs of illness. Changes in behaviour and physical condition are reported to management or fish health staff. Water quality is also routinely monitored as per Standard Operating Procedure (SOP).

Carcass collection

Mortality is natural in all populations. All efforts are made by [corporate entity name] to minimize infection and disease within a containment array. Optimal hygiene, disinfection, carcass collection and containment helps to maintain population health. Carcasses are collected, classified, and recorded on a routine and frequent basis to minimize the potential spread of pathogens and to minimize the attraction of predators. If mass mortality arises, it is managed according to licence conditions and its specific SOP.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.

Carcass classification

Carcasses are examined for obvious cause(s) of mortality and/or signs of disease. Presumed classifications of mortality are assigned and recorded as follows, and the Fish Health Management Team of [corporate entity name] is notified of any unusual counts or types of lesions / mortality:

- Environmental (oxygen, water quality, storms, entrapment, nutritional)
- Fresh “silvers”
- Handling or transport damage (trauma)
- Maturation
- Old (decomposed)
- Poor performers
- Predator attack
- Dead wild finfish carcasses (number and type, e.g. herring-like, rockfish-like, etc.)

Diagnostic sampling is conducted as per [corporate entity name]’s procedures, or upon instruction by the Veterinarian, the Fish Health Management Team, or the Department (DFO-AMD), and recorded and reported as per licence.

Refer to proprietary SOPs in Section(s) ____ of [corporate entity name’s] SOP manual or Best Management Practices.
## APPENDIX V-A URGENT NOTIFICATION (& FOLLOW-UP REPORTS) OF MORTALITY EVENTS

All sections of this appendix must be completed unless otherwise directed in applicable licence conditions or by the Department.

<table>
<thead>
<tr>
<th>Discovery Date Of Event</th>
<th>Fish Health Zone (see Appendix I-A(iii))</th>
<th>Facility Reference #</th>
<th>Company Name</th>
<th>Facility Name</th>
<th>Fish Type</th>
<th>Fish Production Category</th>
<th>Suspected No. Of Fish Dead or Affected</th>
<th>Suspected Proportion Affected (%)</th>
<th>Suspected Carcass Biomass (kg)</th>
<th>Event Type</th>
<th>Probable Cause Or Diagnosis</th>
<th>Action Taken</th>
<th>Information Relevant To Event (i.e. species of algae, environmental factors, contributing factors, other context)</th>
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**Explain:**

**Pick lists:**

- **Fish type:** Atlantic, Chinook, Coho, Sablefish, Other-explain
- **Fish category:** Production, Smolts
- **Event type:** Mortality Event, Disease of App.III, Infectious outbreak, Noninf. Outbreak, Cull event
- **10-day follow report summary report Other - explain**
- **Probable cause:** Low D.O., Algae bloom, Poor smolt, Excess crowding, Handling, Transport, Bathing, Bacterial, Viral, Predation, As yet unknown, Other -explain
- **Action taken:** None required, Resolved, Ongoing correction, Ongoing monitoring, Harvest, Treatment, Carcass removal, Cull, Other-explain
## APPENDIX V-B MORTALITIES BY CATEGORY

<table>
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<tr>
<th>Licence Holder Name:</th>
<th>Reporting Year:</th>
<th>Reporting Period:</th>
<th>Calendar Month:</th>
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<td>Facility Name:</td>
<td>Facility Reference #:</td>
<td>Landfile #:</td>
<td>Fish Health Zone:</td>
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</table>

(see Appendix I-A(iii))

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<tr>
<th>Cultured Species</th>
<th>Other Species - Specify</th>
<th>Fish Production Category</th>
<th>Environmental</th>
<th>Fresh &quot;Silver&quot;</th>
<th>Handling/Transport</th>
<th>Maturation</th>
<th>Old (Decomposed)</th>
<th>Poor Performer / Cult</th>
<th>Predator Attack</th>
<th>Mortality Total</th>
<th>Fish Health Category</th>
<th>Veterinary Diagnosis</th>
<th>Occurrence Category</th>
<th>Mitigative Action</th>
<th>Therapeutant, Pest Control Product Used (and Completed)</th>
<th>Brand Name</th>
<th>Drug Identifier Number (DIN)</th>
<th>Dosage (Dose &amp; Duration)</th>
<th>Weight of Active Therapeutant(s) Used</th>
<th>Anaesthetic Used During Month</th>
<th>General Notes</th>
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[Canada logo]

[Fisheries and Oceans Canada logo]

[Canada 150 logo]

[Ensuring Sustainable Fisheries logo]
APPENDIX V-C  STOCKING AND FISH HEALTH ACTIVITY

Further to the definition of “Fish Health Staff” in Part A, the designated staff are considered qualified for this role if they have adequate post-secondary or on-the-job training and experience in the recognition of disease signs. Veterinarians are the only professionals qualified to make diagnoses and prescribe treatment of fish diseases.

Records of stocking and fish health activity shall include the following:

(a) inventory records (including source, number, pen/container number and lot of fish at the facility);
(b) daily feed consumption and growth rate;
(c) mortality records including: collection dates, carcass classification and documentation of morbidity;
(d) signs of increased morbidity;
(e) fish health and stress monitoring observations during handling or otherwise when noteworthy activities occur such as: predation, strong currents, influx of wild fish to the facility;
(f) biosecurity-related records including: visitor log, equipment cleaning, moving, and disinfection, footbath or equipment changes;
(g) records of fish health-related activity including: medications, lice counts, sorts, splits, fish health or veterinary inspection dates;
(h) records of mortality events, infectious outbreaks, urgent health-reporting;
(i) daily water quality records;
(j) records of non-therapeutic mitigative actions taken to prevent or mitigate disease such as: withholding feed due to blooms, deploying tarps and diffusers, the use of nutritional supplements, reducing densities, net changes or cleaning;
(k) records of samples collected for surveillance and diagnostic laboratory analyses related to fish health (record may reside at headquarter office);
(l) all veterinarian or fish health staff reports (at headquarter office); and
(m) records of reporting fish health information to Federal authorities (at headquarter office).
APPENDIX V-D  USE OF THERAPEUTANTS, PEST CONTROL PRODUCTS
and ANAESTHETICS

Records of the use of all therapeutants, pest control products and anaesthetics shall include the following:

(a) the facility reference number and the name of licence holder;
(b) the species of finfish cultivated at the facility;
(c) the name of the prescribing veterinarian;
(d) a log naming all therapeutants, pest control products and anaesthetics administered and when;
(e) how therapeutants and pest control products were administered and the dosage;
(f) the therapeutic schedule including the date treatment commenced;
(g) the final date of treatment or anaesthesia;
(h) the veterinarian's name and signature responsible for each therapeutant, pest control product and anaesthetic used;
(i) the detailed records of in-feed medication or pest control product administered;
(j) with the exception of source hatchery records (to be held at head office), traceability records and copies of previous medication from smolt entry facilities shall accompany all fish groups both within and off-site, and shall include:
   (i) therapeutant records of the previous 90 days;
   (ii) anaesthetic records for the previous 21 days;
   (iii) pest control product records for the previous 21 days.
(k) any accidental mixing of treated fish and non-treated fish must be recorded; thereafter the mixed group will be considered tainted until the withdrawal period is reached.
APPENDIX VI  SEA LICE MONITORING PROTOCOLS  
(Protocols applicable for Atlantic salmon and trout only)

Definitions

Lice life stages

*Lepeophtheirus salmonis*  
*(Leps)*

**Adult female**
Includes adult female lice, with egg strings (i.e. gravid) or without egg strings

**Motile Lice**
Includes all ‘not permanently attached’ free-moving life stages:

- Adult females (as above)
- Adult males
- Pre-adult male and female lice

*Caligus* sp.

Total numbers of motile *Caligus* species

Both of the above

**Chalimus**
Attached early stages of both *Caligus* and *Lepeophtheirus* species. Both species are categorized simply as chalimus since louse identification at these early life stages is not practical at the facility.

Year class 1 and 2 – see definitions in Part A of this licence.

Broodstock

Broodstock may initially enter saltwater directly into designated broodstock pens, or be entered to a production farm and later become designated broodstock populations, yet remain at the production farm or be relocated to broodstock facilities.

1. Sea Lice Sampling Protocols – Production Year classes 1 and 2

1.1. Other than the exemptions of COL s.6.2 sampling at each facility shall be conducted in a minimum of three containment structures, i.e. pens. Pens chosen for sampling shall include:

(a) one “reference” or “index” pen (i.e. first pen entered in the system, or the pen with the highest probability of having lice burden based on historical facility information). The fish from this pen are assessed EVERY sampling event; and

(b) two additional pens selected at random for each sampling event.

(c) not withstanding COL s.6.2 (a), efforts should be made to restrict the “3 pen sampling event” to a 5-calendar-day period, that is the time between conducting sampling from the 1st pen to the 3rd.

1.2. In order to ensure a random sample of fish are collected from the pen:

(a) numerous fish shall be initially captured using a seine net (or alternate method provided it ensures a crowding and representative collection of the pen’s entire population).
a minimum sub-sample of 20 live fish (i.e. 5 groups of 4 fish) shall be randomly collected using a dip net.

1.3. Fish shall then be placed in an anaesthetic bath (i.e. ‘tote’) or humanely euthanized (e.g. in cases where biological sampling is lethal).

1.4. Physical handling shall be minimized to protect the fish and avoid dislodging lice.

1.5. All sampled fish shall be examined for the presence of lice regardless of the health status or size (i.e. robust, moribund or runt).

1.6. Sea lice on each selected fish shall be discriminated, counted and recorded for reporting in the following four categories:

- Adult Lep females (with or without egg strings)
- Other motile Leps (including adult males, and preadults)
- Chalimus (non-motiles, regardless of species), and
- Caligus (combined totals of adults and preadults)

1.7. When sampling of each pen is completed, water in the anaesthetic tote shall be examined for detached sea lice. Lice dislodged and found within the handling totes must also be counted and categorized in the manner above, recorded as the ‘tote count,’ and included in the calculation of the total lice number (per pen) and average abundance (per fish).

2. Sea Lice Sampling Protocols for Broodstock

2.1. Broodstock shall be sampled in the same manner as production fish until their second winter at sea (i.e. the broodstock pens may be selected in the normal course of selecting three pens on the farm during the month for sampling including bi-weekly counts). If a broodstock pen is randomly selected, 20 fish shall be sampled.

2.2. In January/February of their second and subsequent winters at sea:
   a) a broodstock population on broodstock facilities shall be selected for sampling. Twenty broodstock from one pen shall be assessed.
   b) a broodstock population at production facilities, that are of a different year class than the production fish at that same location, shall be selected for sampling. Twenty broodstock from one pen shall be assessed.

2.3. After January/February of the year in which those brood are anticipated to spawn as two-winter brood, and to reduce handling-related injuries and stress on broodstock:
   (a) all sea lice monitoring shall be conducted opportunistically (or via other husbandry sampling). In other words, all sea lice monitoring shall be
coordinated with other routine broodstock handling procedures, such as sorting, moving or medicating.
(b) broodstock shall be subject to a visual inspection twice per month for the presence of sea lice and any associated grazing blemishes and observations recorded.

3. Licence Holder Recording and Reporting Requirements

3.1 Licence holder’s records shall contain the following information for reporting as per Condition of Licence, Section 7 and Appendix VI-A. The records shall contain the:
   a) date and details of the most recent use of anti-sea louse products;
   b) sampling date of each pen count;
   c) year class of the sampled fish;
   d) unique pen identifier;
   e) number of fish sampled for each pen for each sampling event;
   f) sampling method used;
   g) total number of lice counted, per pen (including the detached lice in the anaesthetic bath);
   h) lice counts separated into four categories as described above (at a minimum); and
   i) action taken if calculated trigger abundances are reached.

3.2 Calculated Pen averages, Sampling Event averages, and Farm Abundance records shall be stored at the facility and made available upon request by the Department.

3.3 Reporting “null” (0) in Appendix VI-A and an explanation is required if no lice monitoring was undertaken at an active production facility.
# APPENDIX VI-A SEA LICE REPORT

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<th>Licence Holder Name:</th>
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<th>Reporting Period:</th>
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<tr>
<th>Sampling Done This Month (Y/N)</th>
<th>If No Sampling, Explain</th>
<th>Sampling Event Start Date</th>
<th>Pen ID</th>
<th>Reference Pen (Y/N)</th>
<th>Final Sea Water Entry Date</th>
<th>Pen Sample Date</th>
<th>Number of Fish Sampled</th>
<th>Sampling Method</th>
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<th>Motile L. salmonis</th>
<th>Motile Caligus</th>
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<th>Start date (if Rx or PC approval)</th>
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**Pick Lists:**
- **No sample:** Harvest ongoing, Fish < 4 pens, Fallow, Recent transfer, Emamectin <21 d
- **Sampling method:** H2O2, Box seine, Brood sort, Meds ongoing, Environmental, Dipnet-feed, Fresh carcass
- **Action taken:** Treatment Pending, None required, Bi-weekly counts, Har...
## APPENDIX VI-B ENVIRONMENTAL RECORD

All sections of this appendix must be completed unless otherwise directed in applicable licence conditions or by the Department.

<table>
<thead>
<tr>
<th>Sampling Date (YYYY/MMM/DD)</th>
<th>Fish Health Zone (see Appendix I-A(iii))</th>
<th>Facility Reference #</th>
<th>Company Name</th>
<th>Facility Name</th>
<th>Temperature 0-1m degC</th>
<th>Temperature 5m degC</th>
<th>D.O. 5m ppm</th>
<th>Salinity 0-1m ppt</th>
<th>Salinity 5m ppt</th>
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### Notes (i.e. Occurrence of harmful algal blooms):

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Appendix VII  Incidental Catch and Wild Mortalities

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Date of Catch</th>
<th>Reporting Year</th>
<th>Reporting Month</th>
<th>Species Common Name</th>
<th>Species Scientific Name</th>
<th>Released (Pieces)</th>
<th>Mortalities (Pieces)</th>
<th>Average Weight (grams)</th>
<th>Pacific Herring Spawn Extent (sq metres)</th>
<th>Pacific Herring Spawn Cover (% / sq metre)</th>
<th>Comments</th>
</tr>
</thead>
</table>

Pick Lists:

**Event Type**
- Harvest
- Transfer
- Net Observation
- Carcass Recovery

**Species Common Name**
- Pacific Herring
- Herring-like
- Pacific Sardine
- Chinook Salmon
- Coho Salmon
- Pink Salmon
- Unidentifiable
- Pacific Cod
- Ling Cod
- Walleye Pollock

- Sablefish
- Unidentified Cod
- Perch
- Perch-like
- Mackerel
- Sculpin
- Quillback Rockfish
- Yellowtail Rockfish
- Copper Rockfish
- Yelloweye Rockfish
APPENDIX VIII ESCAPE PREVENTION AND RESPONSE

Escape Prevention through Maintenance of Cage and Net Integrity

A – General Equipment Design, Use and Maintenance

1. The licence holder must ensure all containment structures (including net pens), nets, cage support systems and other system components such as weights, anchoring equipment and predator nets shall be designed, constructed, installed, maintained and repaired in such a manner that preserves structural integrity and prevents escape of cultured fish resulting from damage caused by interactions with other equipment, the physical environment and marine mammals.

2. The licence holder must ensure that containment structures, cage support systems and other system components that are beyond repair are retired from service.

3. The licence holder must ensure all equipment is designed and constructed to be compatible with other containment structure components so there is no chafing that contributes to weak points in any part of the containment structure.

4. The licence holder must ensure each net pen or similar structure used to contain fish has an inventory control number that is permanently affixed to the net in an accessible location.

5. The licence holder must ensure that all active net pens are attached to the cage support system as the primary point of attachment.

6. The licence holder must ensure that jump nets that extend at least one metre above the surface of the water are installed at the top of any net pen that does not have a permanently attached mesh top or similar barrier.

7. The licence holder must install containment nets and anti-predator nets in a manner that ensures nets are taut at all times.

8. At the request of the Department, the licence holder must demonstrate that net materials are strong enough to resist tearing and subsequent risk of fish escape.

B – Inspections and Record Keeping

9. The licence holder must ensure that nets are tested and inspected by a qualified individual for integrity and strength prior to being installed at facilities, and again when they are removed from the water and prior to re-installation. The requirements for this complete out-of-water servicing and inspection of net pens are as follows:
   a. Complete visual inspections of the entire net pens must be completed for signs of abrasions, tears or holes;
   b. Any damage to the net pen must be repaired;
c. The net strength must be tested for new nets and assessed and tested as appropriate for operational nets; and
d. Records kept as per section 12 of this licence.

10. The licence holder must ensure that daily above-water visual inspections are conducted of active net pens, support systems, anchoring system and anchoring-line buoy orientation, and that any damage or irregularities which increase the risk of escape are corrected or repaired immediately and records kept as per section 12 of this licence.

11. The licence holder must ensure that complete underwater inspections and repair of active net pens and any similar structures that contain fish take place as follows:
   a. Inspections are conducted by divers; or
   b. If an alternative method is used, at the request of the Department, the licence holder must demonstrate that the inspection quality is comparable to diver method; and
   c. Inspections must occur prior to fish entry;
   d. Active nets must be inspected at least every 60 days;
   e. In addition to paragraph 11(d), active nets must be inspected immediately after any operational activity or event that increases the risk of net failure, including but not limited to: harvesting, grading, extreme environmental conditions, net pen changes, fish delivery, recurring predator interactions, vandalism or towing of active containment structure;
   f. Any damage or irregularities identified which increase the risk of escape are corrected or repaired immediately, and
   g. A record of these inspections and repairs shall be kept as per section 12 of this licence.

12. The licence holder must ensure that complete written records are maintained for the entire life of each net pen and available for inspection by the Department, including:
   a. Owner of net and inventory control number;
   b. Net fabricator and date of net fabrication;
   c. If different from paragraph 12 (b), containment pen manufacturer’s name and date produced;
   d. Size and gauge of mesh and dimensions of net pen;
   e. If applicable, the date of net retirement;
   f. Type and date(s) of any anti-foulant treatment on nets;
   g. Accumulated in-water service time;
   h. Initial and operational out-of-water servicing and inspection information as per section 9 of this Appendix, including:
      i. Date and location of testing;
      ii. Company and name of person conducting the test;
      iii. Whether net was tested wet or dry;
      iv. Approximate ambient temperature at test;
      v. Breaking strength test results for each location tested along with manufacturer’s published mesh-breaking strength; or
vi. If an alternate net technology is used where net breaking cannot occur or there is no manufacturer mesh-breaking information, a description of the alternate testing methodology must be provided; and

vii. General comments and notes on overall condition of net;

i. The accumulated time-in-water since the most recent complete out-of-water servicing and inspection;

j. Details and the dates of each inspection under section 10 of this Appendix, including:
   i. Date and person conducting inspection;
   ii. Irregularities noted;

k. Underwater inspection information as per section 11 of this Appendix, including:
   i. Method of inspection;
   ii. Diver or other professional’s name and company;
   iii. Date of inspection;
   iv. Purpose of inspection (eg. routine, following an event, etc.);

l. A description and the dates of all repairs, including reasons for repairs, made to the net cage following any kind of inspection must be recorded.

13. The complete net record as per section 12 must be kept at the facility where it is in use during the life of the net, and following net retirement, must be retained for at least one year and kept at the licence holder’s head office.

C – Escape Prevention and Response Plans (EPRP)

14. The licence holder must have in place an Escape Prevention and Response Plan (EPRP) describing the response to a fish escape or suspected escape including, but not limited to:
   a. The means to prevent further escapes;
   b. The means to recapture any fish that have escaped containment nets but still within the perimeter netting;
   c. The means to contain any fish that have escaped and are in the vicinity of the facility (excluding the use of fishing gear such as seines or gillnets but could include equipment like dip nets which would reduce the risk of incidental catch);
   d. The means to rectify the deficiency that caused the escape;
   e. Required recording and reporting of escape information; and
   f. Equipment and location of equipment required for escape response.
## APPENDIX IX ESCAPE NOTIFICATION FORM

<table>
<thead>
<tr>
<th>Licence Holder Name:</th>
<th>Contact Name:</th>
<th>Contact Phone No:</th>
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<tbody>
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<tr>
<td>Current Licence No:</td>
<td>Facility Name:</td>
<td>Facility Reference No:</td>
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<table>
<thead>
<tr>
<th>Date (YYYY-MM-DD)</th>
<th>Time (HH:MM)</th>
<th>Species (Common Name)</th>
<th>Number Escaped</th>
<th>Average Weight (grams)</th>
<th>Date Stocked (YYYY-MM-DD)</th>
<th>Stock Source Facility Name</th>
<th>Drug Administered (Name of Drug*)</th>
<th>Treatment Start Date (YYYY-MM-DD)</th>
<th>Treatment End Date (YYYY-MM-DD)</th>
<th>Prescribing Veterinarian Name</th>
<th>Prescribed Withdrawal Period</th>
<th>Inventory Lots Treated **</th>
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### Incident Cause***:


### Planned Mitigation Measures***:


### Comments:


---

* List each therapeutants (still within the prescribed withdrawal period) administered to these finfish

** Identification of the groups/pens #s of finfish treated

*** Describe in detail

---

### Pick Lists:

- **Escaped Species type:**
  - Atlantic Rockfish
  - Chinook Sablefish
  - Coho Sockeye
  - Halibut Steelhead
  - Pollock Wolf Eel
  - Rainbow Other

- **Drug Type:**
  - No Drug
  - Oxytetracycline TMS
  - Florfenicol Metomidate
  - Tribissen Clove Oil
  - Romet Other - explain in comments
  - Emamectin

---

Fisheries and Oceans Canada
Pêches et Océans Canada

Canada
APPENDIX X - MARINE MAMMAL INTERACTION MANAGEMENT PLAN

<table>
<thead>
<tr>
<th>Company</th>
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<tr>
<td>Location</td>
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<td>Facility Ref. #</td>
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<td>Date of Submission</td>
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The Marine Mammal Interaction Management Plan is intended to describe policies, procedures, infrastructure, and other measures aimed at mitigating conflict with marine mammals at marine finfish aquaculture facilities including those resulting from entanglements and where lethal control methods are required. The following document is to be completed for each site and must include completed entries for each of the sections listed. Licence holders may submit a plan for multiple facilities provided mitigation measures are identical for all those facilities. The list of these facilities should be provided on the first page of the plan.

Outline:

1. Mitigation
   a. Infrastructure
      i. Anti-Predator Nets, type, height, depth, location, etc (Diagram)
         1. Mesh size, material
         2. Maintenance schedule
            a. Inspection
            b. Repair
      ii. Perimeter Fencing
         1. Type and distribution
         2. Maintenance Schedule
            a. Inspection
            b. Repair
   b. Non-Lethal Deterrents
      i. Approved Devices
         1. Procedures
         2. Staff Training
   c. Interaction Recording Standard Operating Procedures
      i. Templates/Forms
         1. Procedures
         2. Staff training
      ii. Photos/Video
         1. Procedures
         2. Staff Training
2. Lethal Control
   a. Company/Site Policy and Standard Operating Procedures
      i. Procedure
         1. Detailed Circumstances
      ii. Qualified Personnel
         1. Qualification Process
            a. Training/testing/Marine Mammal Identification
            b. Ongoing Training
         2. Credentials and Personal Identification Information
            a. Identification Procedures
            b. Credential Verification Procedures
            c. Contact Information

3. Site Specific Recommendations
   a. Company Policy
   b. Site Policy
## APPENDIX XI-A  MARINE MAMMAL INCIDENT REPORT FORM

<table>
<thead>
<tr>
<th>Licence Holder Name:</th>
<th>Contact Name:</th>
<th>Contact Phone Number:</th>
<th>Facility Name:</th>
<th>Facility Reference Number:</th>
<th>Contact Email:</th>
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### Incident Date

<table>
<thead>
<tr>
<th>Incident Date</th>
<th>Incident Time</th>
<th>Fish on Site? (Y/N)</th>
<th>Average Weight (grams)</th>
<th>Predator Species (Common Name)</th>
<th>Incident Type</th>
<th>Animal Condition</th>
<th>System Component</th>
<th>Photos Taken? (Y/N)</th>
<th>Carcass Stored Pending DFO Advice? (Y/N)</th>
<th>Mammal Released? (Y/N)</th>
<th>Carcass Discarded? (Y/N)</th>
<th>Other Action Taken? (Y/N)</th>
<th>Prior Mitigation Measures</th>
<th>Incident Cause</th>
<th>Corrective Measures Taken</th>
<th>Comments</th>
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### Pick Lists:

- **Predator Species**
  - California Sea Lion
  - Harbour Seal
  - Other

- **Incident Type**
  - Drowning
  - Entanglement

- **Animal Condition**
  - Fresh
  - Moderate-advanced decomposition

- **System Component**
  - Containment Net
  - Predator Net
  - Shark Guard
  - Other

- **Corrective Measures Taken**

- **Comments**
APPENDIX XI-B  MARINE MAMMAL AUTHORIZED KILL REPORT FORM

<table>
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<tr>
<th>Licence Holder Name:</th>
<th>Facility Reference #:</th>
<th>Facility Name:</th>
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<tr>
<th>Date of Kill</th>
<th>Time of Kill</th>
<th>Fish on Site? (Y/N)</th>
<th>Average Weight (grams)</th>
<th>Predator Species (Common Name)</th>
<th>Animal Sank? (Y/N)</th>
<th>Conflict Date</th>
<th>Conflict Behaviour Observed</th>
<th>Action Taken? (Y/N)</th>
<th>Prior Mitigation Measures</th>
<th>Incident Cause</th>
<th>Corrective Measures Taken</th>
<th>Comments</th>
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</table>

Pick Lists:
- Predator Species
  - California Sea Lion
  - Harbour Seal
  - Other
APPENDIX XII - BIOFOULING REMOVAL REPORT

All sections of this appendix must be completed unless otherwise directed in applicable licence conditions or by the Department

<table>
<thead>
<tr>
<th>Date</th>
<th>Cleaning Equipment/Procedure</th>
<th>Nets/Infrastructure</th>
<th>Anti-foulant Type</th>
<th>Date of Application</th>
<th>Average Size of Mussels &gt;2cm</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Type</td>
<td>Number</td>
<td>Cumulative Area</td>
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</tbody>
</table>

Notes:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
APPENDIX XIII Annual Aquaculture Statistical Report

Once completed, this document is confidential within the provisions of the Access to Information and Privacy Act.

For Internal Use Only

Reporting Year: AQUIIS  Licence Type: AQUIIS  Facility Number: AQUIIS  Landfile Number: AQUIIS

Licence Holder: AQUIIS

Introduction

In British Columbia, Fisheries and Oceans Canada is the lead authority responsible for regulating the aquaculture industry. Production statistics collected through this form may be used for analytical and operational purposes and will be shared with other government partners for statistical use. These organizations agree to take appropriate steps to protect all sensitive personal and commercial information, and to release data only in aggregated form.

In compliance with licences issued under the Pacific Aquaculture Regulations, all aquaculture licence holders are required to complete the Annual Aquaculture Statistical Report (AASR) under Section 61 of the Federal Fisheries Act. The completed forms for each calendar year are due no later than January 25 of the following year.

Instructions for Completing the AASR

► This form is for use by shellfish, marine finfish and freshwater/land-based aquaculture licence holders.
► Complete all sections of this form, unless otherwise indicated
► Print in BLACK INK and using BLOCK LETTERS.
► This form must be completed and submitted via email to fishstats@dfo-mpo.gc.ca or mailed to the address provided. To request an electronic spreadsheet version of this form, email fishstats@dfo-mpo.gc.ca.
► Provide weights and measures using metric (e.g. kg, cm) unless other units are indicated.

Section 1 - Harvest for Food Market Sales

Were any fish or shellfish sold for Food Market Sales?  □ Yes  □ No

<table>
<thead>
<tr>
<th>Species (provide full common or latin name)</th>
<th>Weight (kg)</th>
<th>Quantity (For Shellfish Only)</th>
<th>Quantity Unit of Measure (For Shellfish use Lbs, Dozens or Gallons)</th>
<th>Value ($)</th>
<th>Product Type (Round, Live, Fresh Dressed Head On, Fresh Dressed Head Off, Frozen Dressed Head On, Frozen Dressed Head Off, Fresh Fillets, Frozen Fillets, or Other (specify))</th>
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Section 2 – “U-Catch-Em” Sales

Note: Section 2 only applies to Freshwater/Landbased facilities

Were there any U-Catch-Em Sales?  □ Yes  □ No  □ Not Applicable

<table>
<thead>
<tr>
<th>Species (provide full common or latin name)</th>
<th>Average Length (cm)</th>
<th>Total Number</th>
<th>Total Weight (kg)</th>
<th>Total Value ($)</th>
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Section 3 – Processing Information

Were any fish or shellfish processed?  □ Yes  □ No

Who processed your fish or shellfish?
Section 4 – Sales for Restocking or Ongrowing Purposes

Note: Include sales only – not purchases or acquisitions

<table>
<thead>
<tr>
<th>Species (provide full common or latin name)</th>
<th>Life Stage (Eggs, Fry/Fingerlings, Juveniles/Smolts, Adults or Seed, Larvae)</th>
<th>Cultch Type (Shellfish Only)</th>
<th>Number Sold in BC (not exported)</th>
<th>Number exported</th>
<th>Total Value ($)</th>
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Section 5 – In-zone Introductions & Transfer Information

Note: Section 5 only applies to Freshwater/Land Based and Shellfish facilities.

Did you stock your site during the reporting year from an in-zone source?  ○ Yes- complete Page 3  ○ No

Section 6 – Subtidal On-bottom Shellfish Seeding

Note: Subtidal refers to culture activities occurring on the bottom, below low tide.

Did you conduct subtidal shellfish seeding for any species this year?  ○ Yes- complete Page 5  ○ No

Section 7 – Stock on Hand and Future Plans

Note: Section 7 only applies to Freshwater/Land Based and Shellfish facilities.

Will this site be actively culturing during the next reporting year?  ○ Yes  ○ No

If this site had any stock on hand as of December 31, list all species: ________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

Section 8 – Declaration

DECLARATION: I have read all information contained on this report and it is true to the best of my knowledge and belief.

Name (print)  Signature  Date

Position in Company  Email address  Phone #
Section 5 Continued – In-Zone Introductions & Transfers Information

Complete this section if you answered “Yes” to Section 5.

Complete the table below if you answered Yes to question Section 5 AND the transfer(s) did not require a separate Introductions & Transfers Licence. Otherwise, check “Not Applicable” in the space above.

Examples for Shellfish include: Initial stocking of a site(s) with shellfish seed from a within-zone hatchery.

Examples for Freshwater/Land-based include: Introduction of fish, for land-based, U-catch and other FW facilities, from a within-zone source.

Provide one line per species (i.e. all transfer data for each species should be aggregated and reported on a single line)

<table>
<thead>
<tr>
<th>Species Brought on Site</th>
<th>Source (provide aquaculture facility reference number or commercial licence number)</th>
<th>Total Number of Fish Transferred</th>
<th>Total Number of Transfers</th>
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Not Applicable
Section 6 Continued - Subtidal Shellfish (on/in bottom) Seeding Activities

Complete this section if you answered “Yes” to Section 6.

- 6a. If you purchased geoduck (*Panopea generosa*) and/or horseclam (*Tresus*) seed this year, attach your proof of purchase. If submitting electronically, ensure that an electronic copy of your proof of purchase is attached.

- 6b. List all species that you seeded subtidally during the reporting year:

<table>
<thead>
<tr>
<th>Species</th>
<th>Total Area Seeded (m²)</th>
<th>Month Seeding Activities Commenced</th>
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☐ Not Applicable