Annual Inspections on Marine Finfish Aquaculture Sites for the 2006 Inspection Cycle

BRITISH COLUMBIA
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Ministry of Agriculture and Lands

Annual Inspections on Marine Finfish Aquaculture Sites for the 2006 Inspection Cycle

Joint Report of

Ministry of Agriculture And Lands

and

Ministry of Environment

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Fisheries and Aquaculture Licensing and Compliance Branch
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Executive Summary

The success of the aquaculture industry depends on farms being environmentally sustainable and socially acceptable. Government sets the terms and regulates the activities of salmon aquaculture farms in the province; one of our roles is to ensure that the aquaculture industry responsibly meets these objectives.

Salmon aquaculture factors significantly in the British Columbia economy, and is estimated to contribute more than 3,500 direct and indirect jobs. Ninety percent of these jobs are in coastal communities and approximately 50 percent of them are held by women and First Nations; these are full-time, year-round jobs.

Service Agreement:

While the lead agency for aquaculture development and compliance is the Ministry of Agriculture and Lands (MAL), authorities and functions also reside with the Ministry of Environment (MOE) who has a key interest in regulating the industry.

As reported in previous years, a significant development occurred in 2002 when a Service Agreement between the two agencies was formalized to coordinate responsibilities amongst relevant provincial agencies. Under this Service Agreement MAL inspection staff are responsible for assessing overall compliance of the industry. MOE is responsible for monitoring compliance with environmental requirements designed to protect benthic conditions underneath and adjacent to farm sites as well being the lead for enforcement. MAL and MOE continue to review and refine their respective roles with respect to this agreement.

"Compliance" means adherence to the conditions set out in the various regulations for the industry and can include activities to increase awareness regarding regulatory requirements. This can be accomplished through education, monitoring and reporting as a means of determining the level of compliance, and on-site inspections to evaluate the degree of compliance. "Enforcement" activities are carried out by MOE and include verifying and substantiating alleged offences, and recommending and implementing necessary enforcement actions.

Public Reporting:

Starting in 2000, in an effort to improve communications with the public and industry and to demonstrate accountability for the province's compliance and enforcement regime for finfish aquaculture, a decision was made to publish comprehensive public reports on the status of compliance for marine finfish aquaculture. MAL and MOE initially published two separate reports; however, with the advent of the Service Agreement, the Marine Finfish Inspection Reports are now jointly released.

The 2006 inspection cycle report represents the sixth year that a comprehensive compliance report has been released.

Ministry of Agriculture and Lands:

Prior to 2000 the Aquaculture Regulation under the *Fisheries Act (BC)* was fairly non-specific and only required that a licence holder "take reasonable precautions to prevent the escape" of fish and that the holder report an escape. In the absence of specific regulated standards, inspection officials had to review on-site activities and determine if these activities were reasonable and consistent with industry standards to determine if an operator was compliant.

Recommendations made in the late 1990's prompted government to develop more prescriptive escape prevention, detection and response standards. Government developed regulatory standards; the Aquaculture Regulation has undergone two major revisions to effectively address these issues.

Ministry of Environment:

A major consideration of MOE is the protection of the marine environment and fisheries. A key component to achieving this objective was the introduction in 2002/03 of the Finfish Aquaculture Waste Control Regulation (FAWCR). This regulation requires operators to develop best management practices that address a number of environmental concerns.

One of the more significant provisions of the FAWCR is the requirement for environmental monitoring below the farm site. This provides a true determination of the environmental impacts of the biomass at any given site and establishes biological standards that define when farms can be restocked based on specific sediment conditions.

Inspection Activities and Compliance Results:

Regular inspections are carried out on farm sites by provincial inspection staff in order to ensure compliance with relevant standards and regulatory requirements. Inspectors visit operating farms annually and in some cases repeated inspections are necessary to ensure compliance or to investigate additional reports of potential non-compliance.

In addition to MAL inspector visits, other provincial and federal authorities also regularly visit marine finfish sites. On average, each operational finfish facility may be visited at least three to four times a year by various government representatives. Such representatives include MAL Fish Health Technicians, the Ministry of Environment Waste Biologist staff, Fisheries and Oceans Canada, and the Worker's Compensation Board.

General Results for 2006:

Overall inspection results for the 2006 inspection cycle generally demonstrate continual improvements in compliance rates for the finfish aquaculture industry. Industry has responded well to those issues identified during previous inspection cycle years.

In 2006, MAL inspected the 77 operational marine salmon farms with approximately 100 requirements relating to both MAL and MOE assessed by inspectors at each farm site.

During the 2006 inspection cycle, agencies found high levels of compliance for both MAL and MOE requirements. The level of compliance continued to increase with all MAL inspection points found to be in the 97 to 100 percent range with an average of 99.7 percent compliance on all issues. MOE requirements for the same period range from 92 to 100 percent with an average of 99.7 percent on all issues.

For the 2006 inspection cycle, areas of non-compliance relative to MAL requirements included:

- Three inspections revealed that inventory and inspection records were not complete and one operator did not have those records kept on site.
- Two sites did not complete all daily above-water inspection of cage support systems.
- One site did not conduct underwater inspections of active net cages every 60 days.
- One site did not have recent out-of-water service records on site.
- Two sites did not have complete out-of-water service records.
- One site did not have a BMP that included a statement that the plan had been reviewed and endorsed.
- One site's escape response plan did not include step by step procedures for preventing further escapes.
- One site was noted for not keeping separate drug administrative records for two neighbouring sites.
- One site did not have all nets marked with inventory numbers.
- On one site net audits were not performed satisfactorily.
- On one site jump nets did not extend the required one meter.
- One site did not have sufficient net weight to prevent excess billowing.

For the 2006 inspection cycle, areas of non-compliance relative to MOE requirements included:

- One site did not have a generator protected with containment.
- One site's sewage facility did not meet requirements.
- One site's sewage records were not kept on site.
- Three sites did not have water licences.
- One site trapped and relocated a small predator (mink) without a licence.

Compliance and enforcement staff at both MAL and MOE continue to conduct follow up inspections to address identified issues to ensure industry is meeting all necessary requirements.

Inspections are nearing completion for the 2007 inspection cycle and preliminary reports indicate that industry continues to maintain a high level of compliance.

MAL and MOE compliance and enforcement officials continue to strive for improvements to the inspection and compliance program, some of which are highlighted later in the report. Staff will continue to work actively with government, First Nations, industry, and stakeholders in an effort to demonstrate an effective and accountable compliance and enforcement regime.

Other Activities and Results:

This report highlights other activities undertaken by MOE and MAL with respect to the regulation of the salmon aquaculture industry, such as the subsurface inspection and audit program, and highlights some of the continuing enhancements to our compliance and enforcement program.

Sector Background

Data for 2006 indicates that the total harvest of farmed salmon was 78 thousand tonnes. This is up from the 70.4 thousand tonnes reported in 2005. The 2006 volume equates to a farmgate value of $407.4 million and a wholesale value of $443.3 million.

These values for farmed finfish reflect landings and production from only a portion of the licensed marine aquaculture farms in British Columbia. At any time, a certain percentage of sites may be fallow or not in operation. "Fallow" sites are those finfish aquaculture farms that are inactive to allow the seabed to recover from any organic input prior to stocking the next production cycle. This helps ensure that operations are compliant with performance-based waste standards prescribed by MOE.

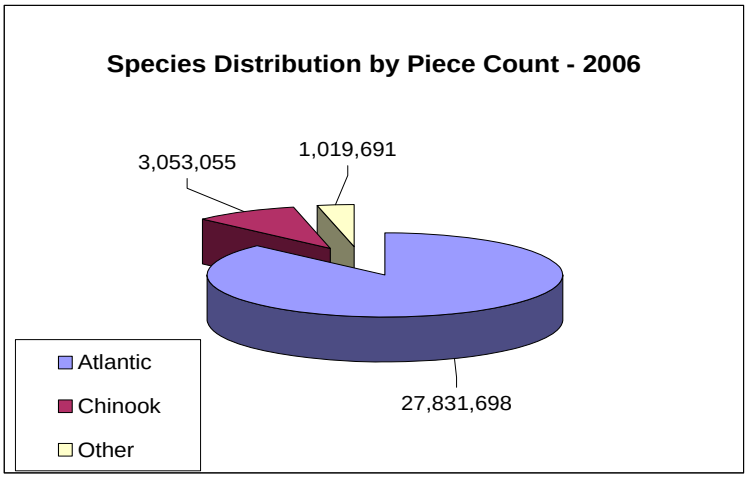
The map included as Appendix 11 shows the distribution of salmon farms in British Columbia. More detailed and site specific information can be found at the following link:

http://maps.gov.bc.ca/imf406/imf.jsp?site=dss_coastal

During the 2006 inspection cycle there were 77 operational sites inspected. Fallow or inoperative licensed sites are not inspected.

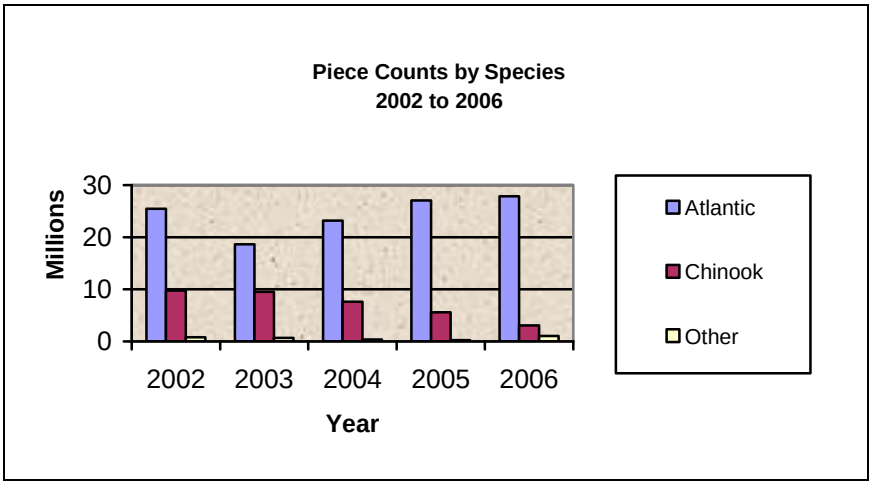
Graph 1 provides a comparison of species currently being held on provincially licensed fish farms and reflects data that was collected by inspectors while they were on site during the 2006 inspection cycle.

Graph 1



Graph 2 compares these same findings over the last five inspection cycles.

Graph 2



On May 16, 2007, the Special Committee on Sustainable Aquaculture (SCSA) submitted its report to the Legislative Assembly. The SCSA's work took 18 months, involved public meetings in 21 communities and 814 written submissions. The SCSA report made 52 recommendations that were far-reaching, and affected the mandates of at least four provincial ministries and four federal departments. At that time the Minister of Agriculture and Lands, the Honourable Pat Bell, indicated he wanted to review the recommendations with his staff and Cabinet colleagues before responding. To date the government has not responded to the recommendations and as a result no changes to the compliance and enforcement program for finfish aquaculture have yet been made in response to those recommendations.

Mandate

Ministry of Agriculture and Lands - Legislative and Regulatory Framework

Fisheries Act

The *Fisheries Act (BC)* provides the authority for MAL to license aquaculture operations and regulate on-site farming activities. It also provides MAL with the authority to set out licensing requirements such as species and production limits approved for each operation, and any additional licence terms and conditions that might be appropriate.

Aquaculture Regulation

The Aquaculture Regulation (Appendix 4) establishes regulatory requirements for specific on-site farm activities. These requirements identify a minimum standard that farm operators must meet.

The Aquaculture Regulation has undergone several changes, the most recent of which came into force on April 19, 2002.

Some of the more substantive powers within the regulation include:

- the authority allowing provincial Aquaculture Inspectors to order suspect net cages to be removed from the water;
- detailed and streamlined record keeping requirements for marine aquaculture sites;
- diving requirements that link dive inspections more closely to higher risk activities or events such as severe storms;
- the requirement for farms to develop best management practice plans to guide routine activities that could lead to escapes;
- changes to minimum net-strength standards, making them more consistent with other jurisdictions;
- a mandatory net-strength testing protocol, making net-strength requirements more enforceable; and
- an increased emphasis on staff training, based on research that suggests human error is a leading cause of escapes.

Ministry of Environment - Legislative and Regulatory Framework

MAL inspectors conduct inspections at active sites on behalf of MOE in accordance with the Service Agreement found in Appendix 1.

MOE manages its compliance functions through staff associated with the Centre of Excellence for Aquaculture, Environmental Protection Division, Nanaimo, and the Conservation Officer Service (COS).

MOE staff are involved in reviewing and auditing environmental monitoring data submitted by farms to ensure compliance with the environmental standards established in the Finfish Aquaculture Waste Control Regulation.

The focus of these inspections is directed at compliance with legislative and regulatory requirements under pertinent Acts and Regulations administered by MOE, ensuring protection of the marine environment, fisheries, wildlife, and human health.

Inspection activities were conducted to determine compliance with waste management requirements dealing with:

- domestic sewage;
- disposal and storage of fish mortalities (morts);
- transport, disposal and storage of blood water;
- disposal of refuse and other wastes;
- storage of hazardous materials; and
- control of predators through the use of trapping and firearms.

There are a number of Acts and associated Regulations dealing with these activities:

- *Environmental Management Act*
- Finfish Aquaculture Waste Control Regulation
- *Wildlife Act*
- *Water Act*
- British Columbia Fire Code Regulation

Environmental Management Act

The *Environmental Management Act* regulates the discharge of waste into the environment. Waste is defined as refuse, effluent or air contaminant capable of impacting human health or the environment. The Act prohibits all waste discharges, except discharges conducted in accordance with a permit, approval or an applicable regulation.

Possible waste discharges from salmon farms include sewage, fish faeces, fish feed, mortalities (dead fish), blood water, net cleaning waste, refuse, used disinfectant from footbaths, and fuel spills.

Finfish Aquaculture Waste Control Regulation

In September of 2002, the Finfish Aquaculture Waste Control Regulation (FAWCR) came into effect, replacing the Aquaculture Waste Control Regulation. The FAWCR requires all operating farm sites to be registered with MOE prior to stocking a facility with finfish.

Under the FAWCR, farm operators are required to implement a Best Management Practices plan to address the management of potentially harmful materials; to promote the reduction of the discharge of wastes and pollutants; to prevent the attraction of wildlife to feed, foodstuffs and mortalities; and to collect and dispose of mortalities in a timely fashion and in a manner to prevent spillage to the environment and minimize odours during storage and transportation.

The FAWCR establishes standards for the discharge of domestic sewage from farm sites and requires the operator to maintain records related to the construction, operation and maintenance of sewage treatment and disposal works.

The FAWCR also has provisions requiring environmental monitoring of sediments and reporting of monitoring results. It establishes chemical and biological standards for sediments at farm sites and defines when farms can be restocked based upon specific sediment conditions.

Wildlife Act

The *Wildlife Act* and the Wildlife Act Commercial Activities Regulation deal with trapping of fur bearing animals by licensed trappers and landowners. Fur bearing animals such as mink and river otter that become conditioned to feeding on farmed fish may be trapped by a licensed trapper during the open season or during closed season with authority from the Regional Wildlife Manager.

The *Wildlife Act* also regulates hunting and requires a person to hold a licence when hunting wildlife.

Water Act

The agency principally responsible for administering and regulating activities related to the *Water Act* is MOE. The *Water Act* regulates the use of surface water for domestic, industrial and commercial use. A water licence is required in order to use surface water for domestic use in industrial settings such as marine fish farms.

British Columbia Fire Code, 1998

The BC Fire Code, administered by the BC Office of the Fire Commissioner, requires 110 percent containment for flammable or combustible liquids. The 110 percent containment requirement of the BC Fire Code supports the *Environmental Management Act* and its regulations in regards to spill prevention measures.

Overview of Licensing and Compliance Program – 2006

The Fisheries and Aquaculture Licensing and Compliance Branch (FALCB) recognizes the need for transparency and accountability in all its licensing and monitoring functions. This mandate is met by the application of an integrated licensing and compliance program that applies personal and institutional independent decision-making principles.

A key function of the FALCB is the receipt and adjudication of commercial seafood applications and the issuance of licences and permits for the following industries:

- finfish aquaculture operations and hatcheries on both private and Crown land, including freshwater operations;
- shellfish aquaculture operations and hatcheries on both private and Crown land;
- commercial seafood activities, including fish buying stations, fish and marine plant processing and cold storage facilities, fish vendors and fish brokers; and,
- commercial harvest of marine plants and wild oysters.

This report only discusses the FALCB's activities related to marine finfish aquaculture.

Licensing

With respect to the review of new salmon farm licence applications, the licensing procedure is thorough and complex. Considerable review is required to determine if a proponent's application meets identified policy criteria. General principles guiding the deliberations on salmon farm applications include fairness, transparency, efficiency, and accountability.

The key values that are applied and considered by licensing officials include:

- protection of public health and safety;
- protection of the environment; and
- sustainable economic development.

The FALCB's licensing policy, attached as Appendix 2 to this report, provides the guidelines applied by the licensing authority in considering licence applications.

Inherent in the licensing decision review process is consideration of the past or demonstrable performance of the applicant which includes a review of compliance history. This includes consideration of the following factors:

- whether the applicant has had any previous convictions under relevant provincial legislation;
- whether the applicant has been the subject of any licence suspensions, cancellations or refusals to license pursuant to the *Fisheries Act (BC);*
- whether there are any outstanding fees or royalties owed to the Crown with regard to current or previously held aquaculture licences; and
- whether the applicant has the necessary experience and qualifications in the aquaculture sector.

Information and data collected during annual inspections and through previous investigations provide licensing authorities with critical information relative to the past or demonstrable performance of the applicant.

As mentioned earlier, an inter-agency Service Agreement, implemented in 2002, was developed to reduce duplication of effort, increase government efficiencies and demonstrate a strong, integrated and accountable compliance and enforcement regime.

The goals of the Service Agreement include:

- efficient use of staff resources to minimize duplication;
- one window approach to aquaculture development;
- high level of compliance;
- early intervention to avoid non-compliance;
- effective enforcement, successful prosecution and rehabilitation where required;
- public confidence; and
- transparency.

The Service Agreement specifies that MAL inspection staff serve as the lead in conducting all finfish and shellfish inspections, monitoring and audits. MOE enforcement staff serve as the investigative lead on all enforcement activities associated with formal prosecutions, court orders and administrative penalties for finfish and shellfish aquaculture.

MOE continues to conduct environmental monitoring of benthic conditions at and near farm sites as part of its compliance program and to support collection of further scientific information that is used to evaluate the effectiveness of the standards prescribed in the Finfish Aquaculture Waste Control Regulation.

A compliance matrix provides guidance to staff when addressing non-compliance issues. Specific compliance issues are defined in the matrix, along with the action required to be taken by the licensee to achieve compliance. The matrix also indicates what information will be required by the inspector to confirm that the issue is being resolved, as well as provide guidance as to the appropriate enforcement action to apply.

While the matrix provides specific guidance, it is important to recognize that inspectors and officers evaluate each incident of non-compliance on its own merits, and based upon the specific fact pattern, decide on an appropriate course of action.

The details of the service and enforcement agreement can be found in Appendix 1 and details of the compliance matrix can be found in Appendix 9 of this report.

Compliance and Enforcement

MAL

In keeping with the inter-agency Service Agreement, the compliance and enforcement regime for MAL Compliance and Monitoring Unit includes:

- promoting awareness, education, and training;
- promoting industry best practices;
- developing cooperative partnerships and agreements contributing to government objectives;
- conducting monitoring activities, inspections and audits;
- referring and assisting MOE in conducting investigations on alleged legislative and/or licensing violations; and
- reporting publicly on the compliance status of salmon farm inspections.

MOE

MOE's compliance and enforcement program for the finfish aquaculture industry includes:

- developing and communicating standards to protect human health and safety and to protect and restore the environment and the natural diversity of ecosystems, including fish and wildlife species and their habitats;
- conducting annual field audits of fish farm sites to ensure compliance with the Finfish Aquaculture Waste Control Regulation;
- conducting legal investigations to address non-compliance with regulatory standards; and
- reporting publicly on the compliance status of salmon farm inspections.

Government continues to improve its compliance and enforcement programs to meet its commitment to have an environmentally sustainable aquaculture industry with high standards of environmental protection.

A number of enhancements to government's inspection and compliance programs were implemented in 2006, as follows:

- Staff at MAL, MOE, Fisheries and Oceans Canada (DFO) and the Canadian Food Inspection Agency (CFIA) continued to refine and enhance working relationships and communication efforts between agencies.
- Expanded regional contacts through enhanced cross compliance efforts with other agencies, most notably DFO, by conducting joint inspections, investigations and broadening communication efforts.
- All MAL inspectors successfully completed one week of enforcement related courses.
- Cross agency briefing held with Conservation Officer Service (MOE) and MAL inspection staff.
- Hiring of a compliance unit administrative coordinator.

Methodology

Inspection Activities

Inspections occur at active salmon aquaculture sites at any time during the year. The objective of these inspections is to measure compliance with the regulatory requirements of MAL and MOE, and the licence terms and conditions as set out in the Aquaculture Licence issued by MAL. Some farms may be subject to repeat inspections, particularly if there is an open investigation or ongoing non-compliance issues.

An inspection form (Appendix 5) and compliance report (Appendix 6) are completed by the inspector for every inspection at an active finfish aquaculture site.

Inspection Form: The inspection form is primarily designed for the use of the inspector and assists with reviewing the site's compliance with regulatory requirements. The inspection form also becomes part of the site's compliance history.

Compliance Report: The compliance report is filled out at the time of inspection and a copy of this form may be left on-site with the site manager or hand delivered to the company headquarters. The compliance report details any deficiency, identifies the relevant regulatory requirements, specifies the corrective measure to be implemented, and identifies the time frame for expected compliance.

Notification: The company headquarters will be notified as soon as practicable of the results of each inspection. This can be done in writing and/ or in person. A copy of the compliance report that was completed on site will be provided along with any other applicable compliance information. The notification letter that is sent to the company requests that the company respond to any identified deficiencies within a specified time frame, if applicable. Companies are also requested to provide written notification once corrective measures have been implemented.

Review and Sign-off of Corrected Deficiencies: Once the inspector has received notification that the company has corrected the identified deficiency, the inspector must verify compliance in writing. This verification procedure may or may not involve a site visit depending on a number of factors including the nature of the deficiency.

On-site Inspection Procedure: During the on-site inspection, inspectors interview company employees, review the farm's operational procedures and practices, and review maintenance records for completeness and compliance with the *Fisheries Act (BC)* and Aquaculture Regulation. The inspector also performs an above-water visual examination of the site, which entails a perimeter inspection of each containment pen and infrastructure including anchors, walkways and other associated hardware.

Key Components of the On-Site Inspection – MAL Regulatory Issues

Management Plan, Terms and Conditions, and Licensing: The management plan is a document the farm operator is required to submit that specifies design and operational criteria of the fish farm. Management plan applications undergo extensive reviews and, once approved, compliance with elements of the plan is a condition of the site specific Aquaculture Licence. Companies are required under the *Fisheries Act (BC)* to operate within the provisions outlined in these plans.

During the on-site inspection, the inspector will assess compliance with the Aquaculture Licence and related management plan by observing and detailing site specific information. The inspector will compare these observations against the most current management plan to determine compliance. This assessment includes information on biomass, species cultured, licensing, and any special provisos that may be attached as a condition of licence.

Escape Reports: Escapes must be reported within 24 hours to the Fisheries and Aquaculture Licensing and Compliance Branch. On-site inspections provide opportunities for inspectors to audit this requirement by reviewing on-site records and to question farm site employees or managers.

Inventory Records: Companies are required to keep an accurate and complete inventory of stock on hand for each net cage. These records must be maintained until that stock is removed from the site.

Inspection Records: Farm operators are required to conduct specific inspections on-site as part of the precautionary measures to prevent escapes. Regulations require these inspections to be documented and records must be kept on-site and produced at the request of an inspector.

Best Management Practices Plan (BMP): Companies are required to develop these plans for each site. The BMP must include a description of specific practices and procedures used to prevent fish escapes during high risk activities conducted at the farm site.

Escape Response: Inspectors verify that the company has developed and posted an escape response plan. Farm staff are often questioned to determine if they can accurately describe the contents of these plans.

Therapeutant Use and Records: On-site inspections provide an opportunity to ensure that therapeutant usage on the farm site is properly documented and these records are properly maintained.

Installation of Containment Structures: A visual, above-water inspection is conducted during which the inspector ensures that the cage support equipment is designed, installed and maintained to prevent entanglement and chafing against containment nets, predator nets and shark guards.

Net Cage Configuration & Storage: The installation of the net cage is examined to ensure that the net cage is properly installed, the tie off points are secure, the jump net is the required height, and there is sufficient weight on the net to prevent excessive billowing. Net storage is also reviewed to ensure nets are properly stored and protected from ultra-violet rays.

Net Cage Inspections: The inspector reviews the condition of each containment net in use and may order or conduct net-strength testing if there is any concern or issue over the integrity of any net cage. This may involve on-site testing or a request by the inspector to remove the net for a complete out-of-water servicing.

The inspector also examines mesh size, the frequency and quality of repairs, whether the company is compliant with the specified net cage inspection, and the frequency of inspections. The inspector will also determine if the nets are properly tagged with an inventory control number and repairs are carried out as required.

Boat Docking: Inspectors review boat docking areas to ensure they are designed to prevent propeller damage to net cages and that proper signage has been provided to identify these as designated boat docking areas.

Fish Handling: If fish are being harvested or handled, the inspector ensures that the company complies with requirements to have spotters and to use catch nets to prevent accidental loss of fish through human error.

Predator Control: The inspector reviews the predator control program for the farm site to ensure that the operator has responded to any repeated predator attacks by implementing additional measures to prevent damage to the containment structures that might lead to loss of fish.

Key Components of the On-Site Inspection – MOE Regulatory Issues

Best Management Practices: Companies are required to document procedures that identify practices and operations consistent with the objectives that are defined in the FAWCR. These practices are designed to minimize the discharge of wastes and/or reduce the risk of accidental spillage of potentially harmful materials.

The inspector will check to ensure all the required elements have been addressed in the BMP.

Blood Water Disposal: Fish handling procedures are reviewed with the operator and in cases where fish are bled on site the inspector will determine how the farm operator disposes of or contains the blood water.

Net Treatment, Cleaning and Waste Disposal: The inspector examines net handling procedures to determine the location and manner in which containment nets are handled and cleaned to remove marine growth.

Disinfectant Use and Disposal: The type of disinfectant the farmer uses to treat equipment or uses in foot baths to prevent the spread of fish disease is reviewed by the inspector. Storage methods, use, disposal, and any treatment prior to disposal are examined.

Mort Storage and Disposal: The inspector determines where fish morts are stored after they are collected from individual net pens. Where morts are stored on site the inspector reviews storage methods and the frequency of removal. The final destination of the morts is determined to ensure proper removal and disposal.

Refuse Storage and Disposal: The inspector reviews disposal methods and determines the disposal location of domestic and/or industrial refuse produced on the finfish farm to ensure proper removal and disposal.

Sewage Treatment and Disposal: The inspector determines the method of domestic sewage disposal and ensures proper authorization is in place if required. In addition, the inspector will ask the operator to produce the required documentation and sewage maintenance records.

Water Use and Licensing: The inspector determines the source of domestic water supply to ensure that where required, the proper water use licence is in place.

Wildlife Predator Trapping: Trapping wildlife that prey on finfish is occasionally arranged by the farm operator. The inspector determines the number and species of wildlife trapped, how they are trapped, the trapper's name, and ensures that a proper permit is in place for this activity.

Predator Management: Occasionally problem mammals that prey on farmed salmon are destroyed with firearms as approved by DFO. Inspectors review usage of firearms at the farm site.

Fuel Product Use, Storage and Containment: The inspector reviews fuel storage on site to determine if the fuel is securely stored in an environmentally safe manner and that diesel tanks and generators have a minimum 110 percent containment or other adequate containment method. Inspectors also determine whether the operation is in compliance with section 4.1.6 of the BC Fire Code.

Environmental Management: The inspector determines if a spill contingency plan is available on site, reviews the plan, and determines whether adequate spill equipment is present to support the plan.

Compliance Rates for 2006 – Regulatory and Licensing Requirements

Part #1

MAL Requirements

A. Management Plans and Licensing

The management plan is a key element in establishing and maintaining performance-based standards for environmental sustainability, stewardship and compliance. The plan and accompanying information is used by biologists in the Aquaculture Development Branch (ADB) to analyse the technical feasibility and biophysical capability of proposed and existing fish farm operations. The ADB then makes recommendations to Statutory Decision Makers in the Fisheries and Aquaculture Licensing and Compliance Branch (FALCB). The FALCB uses the plan to establish conditions of licence under the *Fisheries Act (BC)*, and as a compliance measure under that and other attendant Acts and Regulations. The FALCB has the authority and the capacity to inspect fish farm operations for compliance with the Aquaculture Licence.

Non-compliance with the operational conditions of a plan may, in some cases, have the potential to result in negative effects to the marine environment as well as the environmental sustainability of the operation itself. This can result from having more than the approved maximum biomass, or by altering the approved cage system configuration so that it no longer makes optimal use of the biophysical attributes of the site. There may be technical concerns if there is variance from the originally approved engineering specifications in the plan. Variance from the plan may put the operation in conflict with the siting criteria (e.g. proximity to salmonid streams or sensitive habitat) under which the original plan was approved.

Every aquaculture facility must have an approved management plan in order to obtain an Aquaculture Licence. The holder of an Aquaculture Licence must comply with the approved plan. Failure to follow the plan is deemed non-compliant with licence conditions and is subject to enforcement action. Note that due to the time required to complete First Nation consultation obligations, a number of applications are still awaiting final adjudication, some since 2003. In instances where adjudications have not yet been completed, and at the discretion of the attending Fish Inspector, a farm can be considered in compliance with production requirements, if the farm is within the production limits established in an approved Management Plan, the review of which included an assessment of environmental affects, and in addition, the application has been awaiting adjudication due to First Nation consultation obligations for a period longer than six months. All farms must adhere to the *Finfish Aquaculture Waste Control Regulation*.

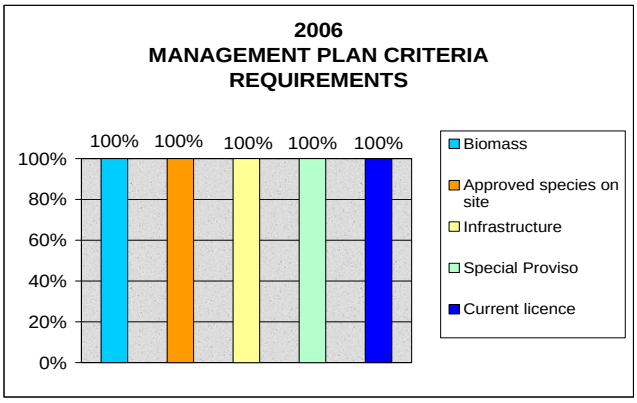
There were no noted areas of significant concern relative to management plans and licensing in 2006.

All 77 sites were deemed to be in compliance with approved species on site, biomass, current licence, infrastructure and adherence to any special provisos at the time of inspection.

Photograph #1

Assessing Infrastructure

Graph 3



B. Escape Reports

The Aquaculture Regulation requires that fish escapes or suspected escapes be reported to MAL verbally within 24 hours and in writing within one week from the date of discovery. On-site inspections provide the opportunity for inspectors to interview site employees and view log entries and other farm documents to assess compliance with this requirement.

In 2006 there were a total of 61 incidents of escapes or suspected escapes investigated by the ministry. Inspectors were able to determine that escapes occurred in 11 of those incidents. The number of fish reported as escapes was 19,085; this included 17 Atlantic salmon and 19,068 Chinook salmon. Of these escapes, significant losses occurred at two separate farm sites; one incurred the loss of 8,000 Chinook salmon while another lost 11,064 Chinook salmon. It should be noted that 13 out of the 17 Atlantic salmon lost were from two incidents at a processing plant rather than an aquaculture facility.

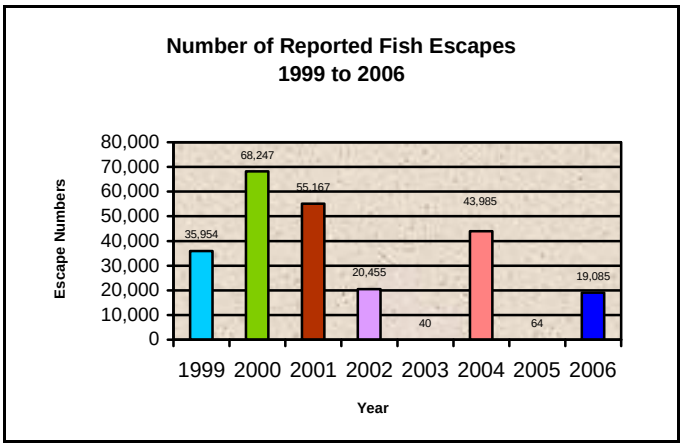
During the course of inspections, inspectors did not find any evidence supporting unreported escapes or suspected escapes.

The following graph illustrates the number of fish that have been reported as escapes into the marine environment from 1999 to 2006.

Additional information can be found on MAL's website at

http://www.agf.gov.bc.ca/fisheries/escape/escape_reports.htm.

Graph 4



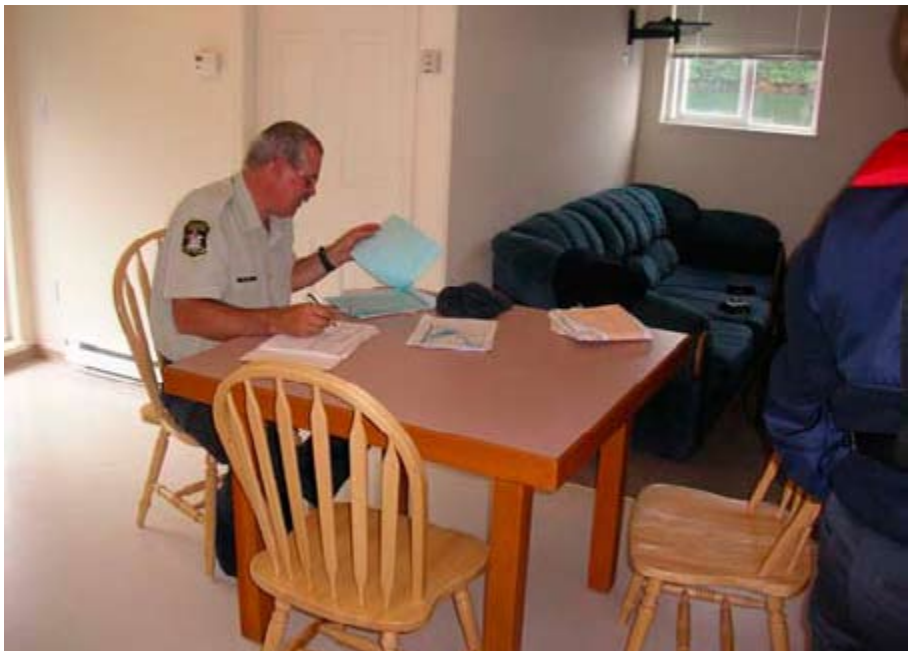
C. Stock Inventory Reports and Record Keeping

The Aquaculture Regulation requires that licence holders keep accurate and complete inventory records of stock on hand and requires these records to be maintained for each net cage in the system. These records must show the inventory introduced to the farm site and the source of the stock, and documentation should reconcile any fish transferred in or out, including escapes and mortality.

The objective of this requirement is for the farm operator to know at any given time what the stock levels are for each net cage on the farm. This is not only important from an animal husbandry perspective but also to enable the operator to more accurately assess and report incidents of escape, and provide a measure of compliance with approved biomass. Accurate records are also important for the statistical database that MAL maintains.

The inspection team does not complete detailed forensic audits and reconciliation of inventories with paper documentation. Instead, compliance is based on evidence presented by the farm operator, to the satisfaction of the inspector that these records are being kept in the manner prescribed. Part of the regulatory requirement assessed is the requirement for these records to be kept on site and made available to the inspector upon request.

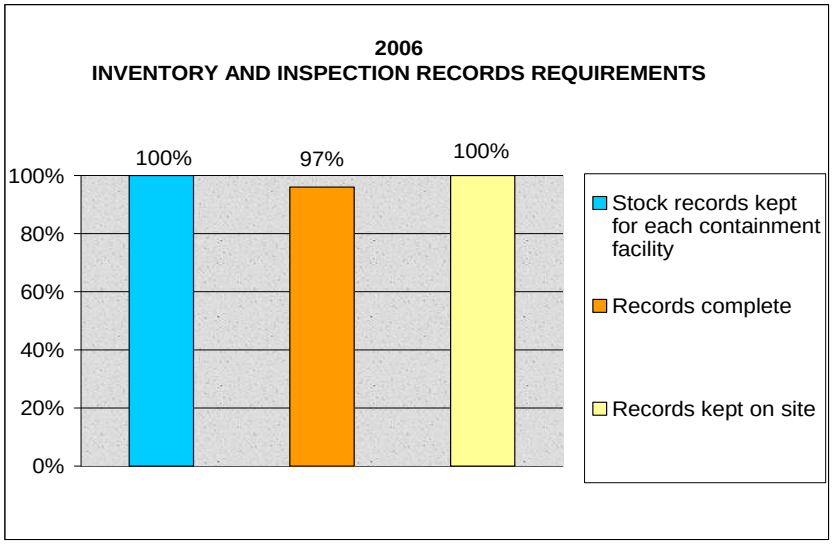
Photograph #2



Inspector reviewing records at farm site.

In 2006, operators at all sites were maintaining stock inventory records. However, records were found to be incomplete during two inspections: one failure to accurately record cause of mortality, and one failure to record source, number and lot of finfish.

Graph 5


2006
INVENTORY AND INSPECTION RECORDS REQUIREMENTS
100%
97%
100%
100%
80%
60%
40%
20%
0%
Stock records kept for each containment facility
Records complete
Records kept on site

D. Containment Nets, Inspection, Maintenance, and Record Keeping

During the 2006 inspection cycle at 77 operating sites, there were approximately 773 deployed net pens (containing fish) that were inspected.

The integrity of these containment nets is an important factor in finfish farming. Nets must be able to withstand the rigours of the marine environment; weak nets are more susceptible to breakage and subsequent loss of fish. The Aquaculture Regulation specifies that all containment nets must be properly tagged, maintained and regularly inspected.

Reviewing the record keeping requirements is an important component of on-site inspections. Records are not only important for the farm operator as a method to review daily activities and for keeping a history of maintenance activities, but they also provide an audit tool so inspectors can verify that the operator has complied with specific inspection points.

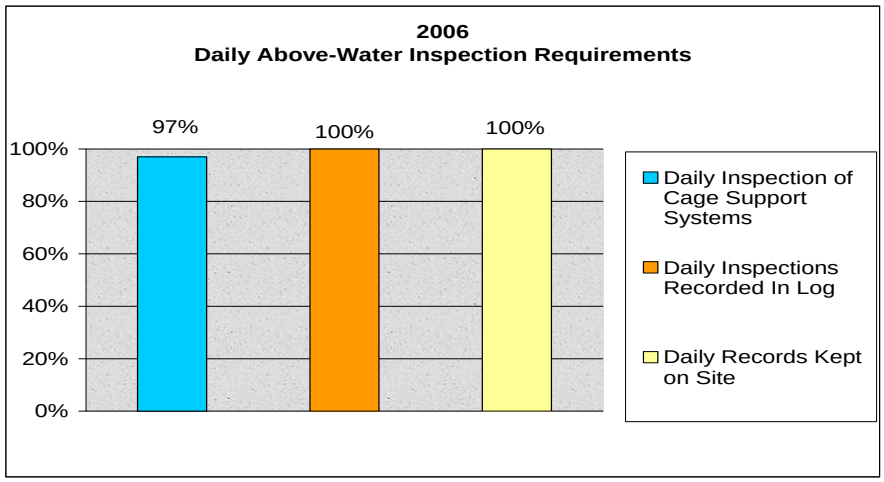
There are a number of key inspection and record keeping requirements specified in the Aquaculture Regulation. This section examines the compliance with requirements to conduct and maintain information on a number of these inspection activities. These include daily above-water inspections, inspections occurring after a high risk activity, requirements for net marking and description, containment net out-of-water servicing records, details of underwater inspections, and records of any general net inspections and repairs.

Daily Above-Water Inspections:

The Aquaculture Regulation specifies that daily above-water inspections of net cages are required to ensure integrity of the system. This information must be maintained in the daily maintenance logs and these logs are required to be kept on site and produced at the demand of the inspector.

In 2006, findings indicate that daily above-water checks were being conducted at all 77 sites. Logs were used to record daily inspections and those were kept at sites. However, inspections at two sites revealed that farm staff had failed to record some daily above-water inspections.

Graph 6



Net Marking, Repair and Maintenance Records:

The Aquaculture Regulation requires that specific information be collected and maintained for each containment net on site.

In the event of an incident, net records are a key component of the investigation. This information is required to be kept on site with the deployed containment net and must be provided to the inspector upon request.

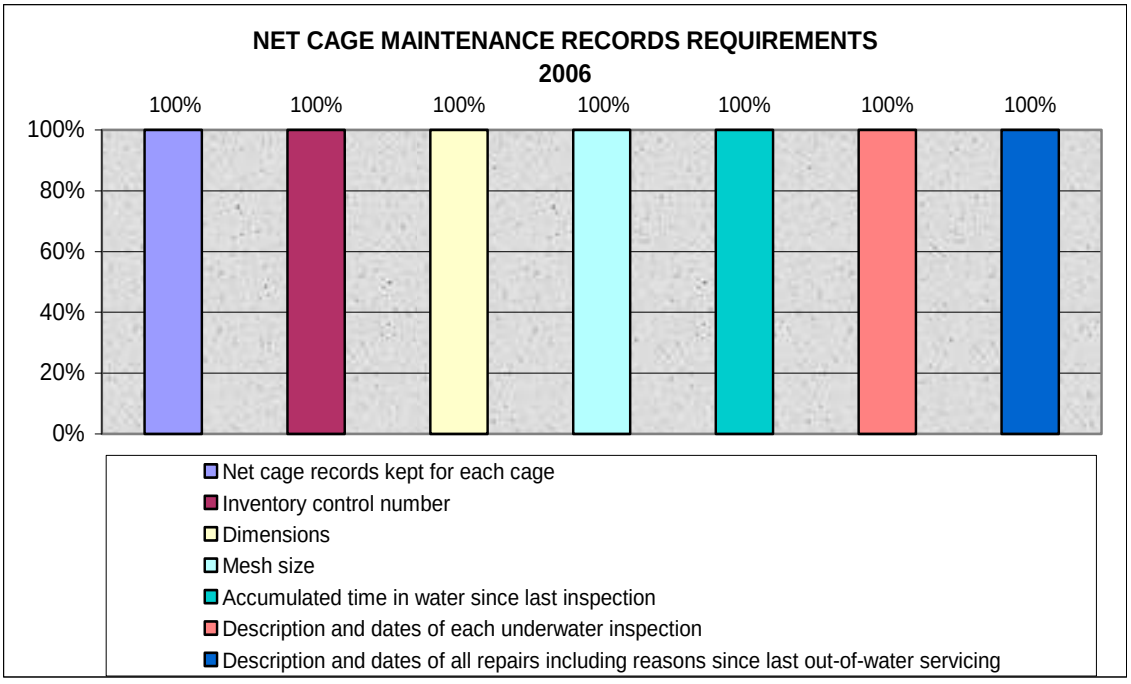
Net records include specific details such as net inventory number; dimensions; mesh size; accumulated time in the water since the most recent out-of-water inspection; a description and the dates of each underwater inspection performed since the most recent complete out-of- water servicing and inspection; and a description, date and reasons for all recent repairs.

Net damage found during regular above-water or underwater inspections of nets that are in use must be immediately repaired. This includes both the containment net as well as the jump net portion. Any temporary net repairs should be replaced with more permanent repairs as soon as possible.

Photograph #3

Net repair completed on the jump net portion of a containment net.

Graph 7



Out-of-Water Servicing:

There are no requirements or timeframes for when containment nets must be strength tested and serviced. The frequency of the out-of-water servicing is left up to operators thus providing them flexibility to meet operational needs.

Inspectors have the authority to require that an operator demonstrate that a net cage meets the minimum breaking strengths where the condition of any net may be in question. The inspector can require the operator to conduct an on-site test of the net or can require that the net be removed from the water for a complete inspection and servicing.

The out-of-water servicing includes a complete inspection of the entire net cage; any damage must be repaired. The net cage must be strength tested in accordance with the BC Net Cage Mesh Strength Testing Procedure. A record of this testing must be completed and the record must be signed by the person completing the test. A record of this out-of-water servicing and testing must accompany the net to the farm site and be presented upon request to the inspector.

An important component of the out-of-water servicing is the net breaking strength. Appendix 2 of the Aquaculture Regulation, Sections 14 and 15 describe the minimum breaking strength requirement that various size containment nets must meet. The Aquaculture Regulation is provided as Appendix 4 of this report.

To develop consistency with respect to determining net breaking strengths a standardized mesh strength testing procedure has been developed and must be followed when conducting these tests. Appendix 3 describes this procedure and an electronic copy can be found at the following link:

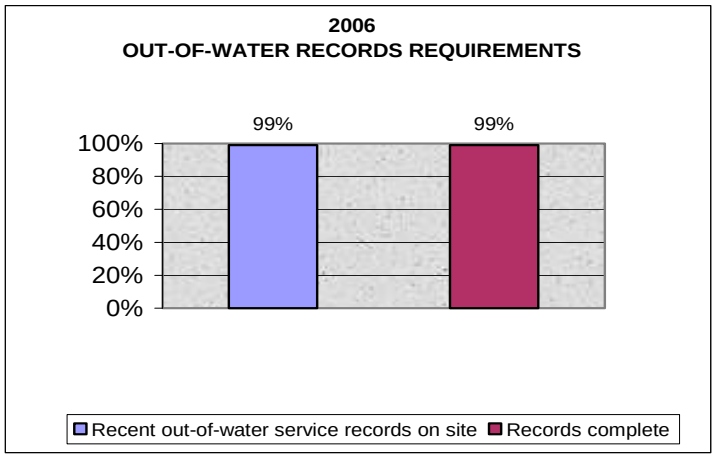
http://www.agf.gov.bc.ca/fisheries/compl/Final_net_testing_protocol.pdf.

Any nets that do not meet the net breaking strength requirements are inadequate and they cannot be re-deployed as containment nets. These nets should either be disposed of or relegated to other purposes.

Out-of-water servicing records may not be required if the net has been newly manufactured and is being used for the first time or if the net has yet to undergo an out-of-water service.

In 2006, there were 71 operating sites where out-of-water servicing records were required. At 70 sites these records were available, and 69 of those 70 were complete.

Graph 8



Underwater Inspections of Active Net Cages:

There are a number of required underwater dive inspections that are specified in the Aquaculture Regulation. Currently these inspections must be carried out by divers but the regulations also provide the opportunity for flexibility in the event that an alternative suitable method is proposed. Before any proposed method can be used it must be reviewed and approved by MAL.

In 2004, divers were the only approved method for conducting underwater inspections. In March 2005, after careful review by MAL, an alternative method of net inspections was approved, allowing specific net inspections to be done manually from the surface by following procedures outlined by MAL's Manager of Aquaculture.

Deployment of a containment net is a high risk activity. Before the net is properly stabilized there is an increased risk that the net may catch and tear on a snag point. The Aquaculture Regulation requires that once a containment net is in place and prior to the introduction of fish, an underwater inspection must be made to ensure that no damage has occurred during the net deployment that might increase the risk of a fish escape.

The Aquaculture Regulation requires that routine underwater inspections of containment nets be completed every 60 days or after any activity that may increase the risk of net failure and potential escape. Examples of this would include extreme environmental conditions, net cage changes, fish delivery, predator attacks, towing net cages, and vandalism.

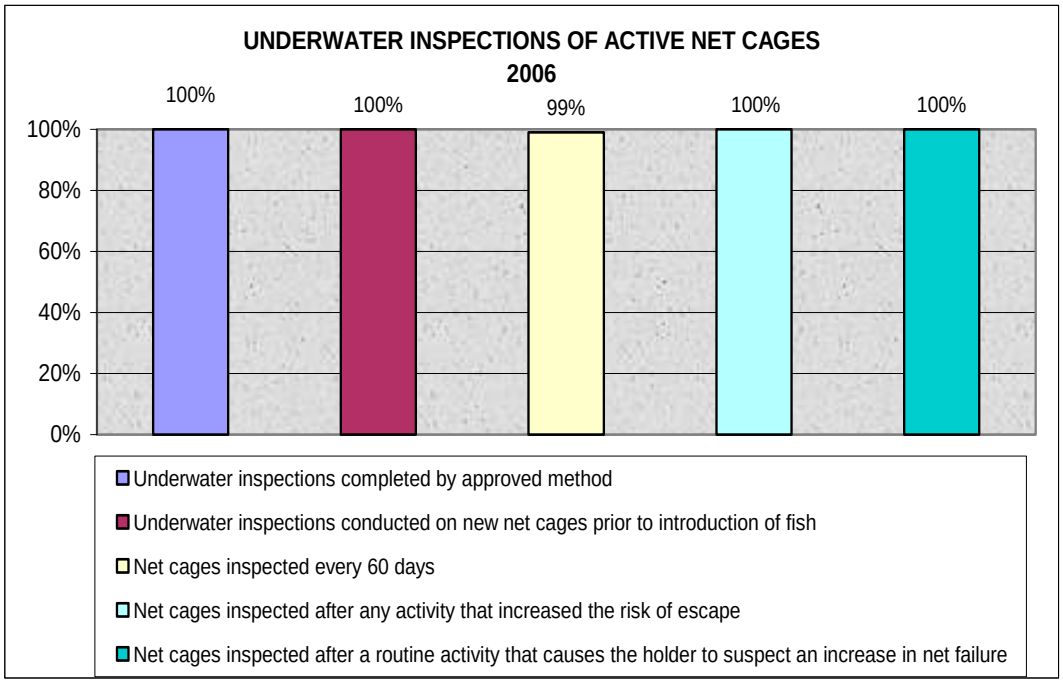
Photograph # 4

Company divers preparing for a net cage inspection and mort recovery.

In all but one case, 2006 underwater inspections were being conducted on the containment nets every 60 days as well as after high risk activities.

The following graph illustrates the compliance rates with the underwater dive inspections.

Graph 9



E. Best Management Practices Plan

Both the Finfish Aquaculture Waste Control Regulation and the Aquaculture Regulation contain requirements for marine fish farms to develop and implement Best Management Practices Plans (BMPs).

Under the Aquaculture Regulation, the requirement to have a BMP in place came into effect in late October, 2002, and the requirement for a BMP under the Finfish Aquaculture Waste Control Regulation came into effect in March 2003.

The purpose of the BMP requirement under the Aquaculture Regulation is for the companies to identify operational risks and to develop procedures that recognize these risks in an effort to prevent or minimize escapes.

Companies must develop and follow a written BMP for the operation and maintenance of their marine finfish facilities. Operational procedures identified in the BMP must be consistent with or exceed practices described in Appendix 2: Standards of Practice for Marine Finfish Aquaculture Escape Prevention and Response in the Aquaculture Regulation.

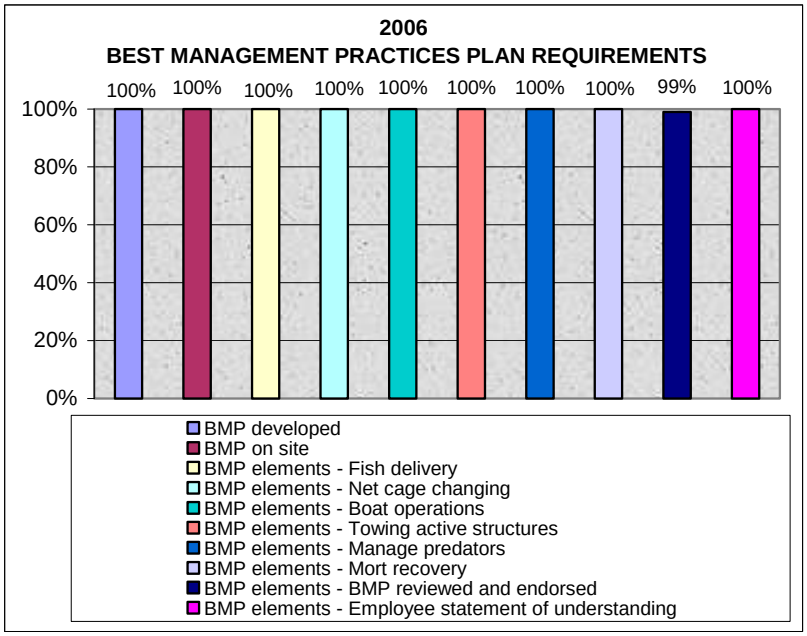
The BMP identifies how a wide range of operational activities are to be carried out. These will include, as a minimum, finfish delivery, handling and grading, net cage changing, boat operations and maintenance, towing containment structures, management of predation, and recovery of mortalities.

As all these activities carry some risk, it is critical that the BMP is developed to address these issues. All employees must understand and follow the BMP at all times.

Any time there is a change in the operation of the marine finfish aquaculture facility the BMP must be updated to reflect these changes. Companies should periodically review operational procedures to ensure consistency between on-site operations and what is described in the BMP.

In 2006, all farms inspected had developed a BMP and had a copy of the BMP on site. However one of these sites was deficient where the BMP failed to include a statement that it had been reviewed and endorsed by the licence holder.

Graph 10



F. Escape Response

Every operator must have a written escape response plan. To initiate an effective escape response in the event of an incident, staff must be well trained in the elements of these plans. There must be step-by-step procedures for preventing further escapes and for reporting escapes. These plans must be posted in a visible location at the facility and the location and contents must be well understood by all staff.

In 2006, all facilities inspected had developed an escape response plan and had the plan posted on site. The plan identified procedures to report escapes and staff could accurately identify the location and content of the plan. Only one site did not have step-by-step procedures identified for preventing further escapes.

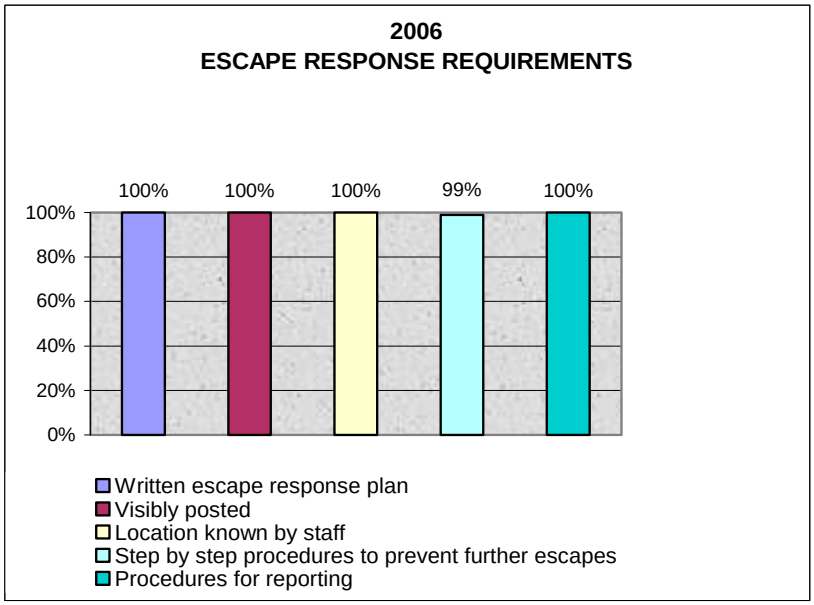
Photograph #5

Escape recovery kit containing dedicated seine net and equipment to be used in the event of an escape. In the event of an incident this net and equipment is generally deployed inside a damaged containment net in an effort to prevent further loss of fish.

Another aspect of the escape response plan is for the operator to have arrangements with federal and local government authorities to obtain without delay the approvals necessary to attempt a recapture effort. This is a requirement of Section 40 of the Aquaculture Regulation. To facilitate industry in meeting this requirement DFO created a special ZZA permit that is issued to fish farm companies for the recapture of escaped Atlantic salmon only. The permit is not site specific and is issued to the salmon farming company.

The following graph illustrates compliance to the escape response requirements.

Graph 11



G. Therapeutants - Use and Record Keeping

There are specific regulatory standards for documenting use of prescription therapeutants on farmed fish. Documentation of therapeutants is an important record keeping requirement for the finfish farmer. Records that identify treatment and treatment schedules must be kept. The *Canadian Food and Drugs Act* provides standards governing the use of drugs and fish destined for human consumption; the holder must comply with those standards. Fish may be harvested if a drug has been prescribed and the mandatory withdrawal period, as specified by the veterinarian, has passed since the administration of the drug.

To satisfy the inspection, the operator must be able to demonstrate that all appropriate paper work has been completed to document and track the administration of any therapeutants.

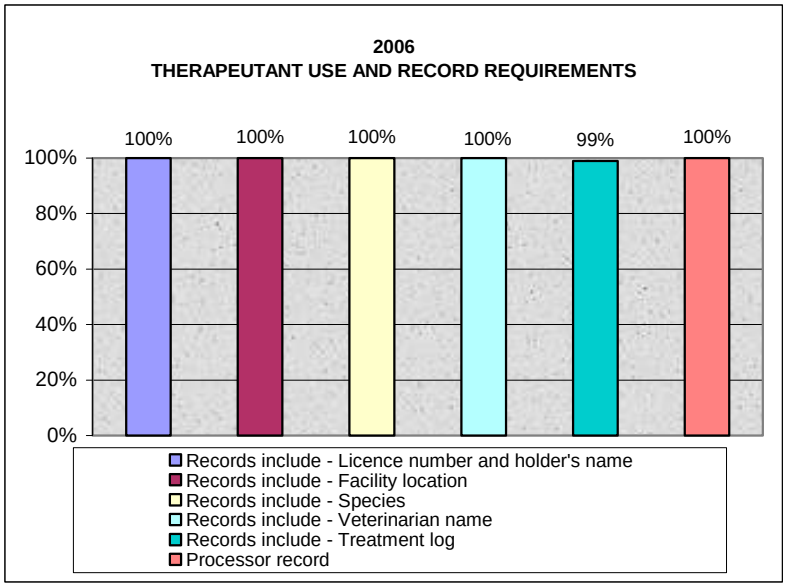
This includes a record and log of:

- the aquaculture licence number and name of the holder;
- the location of the facility;
- the species of finfish being cultured;
- the name of the veterinarian;
- the name of the therapeutants administered;
- how the therapeutants were administered;
- the treatment schedule including the date treatment commenced;
- the date of last treatment;
- the species of finfish; and
- the name and signature of the person responsible for administering the therapeutants.

Upon harvest of fish that have been treated (and held according to the withdrawal period), the holder must be able to produce a statement with specific information on the treatment history of the lot harvested. This statement must then accompany the fish to the processing plant. It provides the operator of the plant with documentation of any drug use, where fish have been treated and verifies compliance with the withdrawal periods. There were no deficiencies noted with respect to this requirement.

In 2006, inspections revealed that although all sites inspected were maintaining a detailed log of treatment schedules and drugs used, one operator was not keeping separate logs for two neighbouring sites; logs for the two sites were kept together at one site.

Graph 12



H. Net Cage and System Inspections

Installation of Containment Structures:

The design of the cage support system is important when considering the potential for snagging and tearing the containment net. Containment nets can be, and are, subjected to extreme loading, especially if they are fouled with growth, are in a high current situation or are exposed to a combination of these and other factors. The net mesh, if snagged on an anchor shackle or other catch point, cannot tolerate extreme loads and a snag can quickly develop into a significant tear under certain conditions.

All equipment that comes into contact with the containment net must have a smooth exterior designed to prevent snagging the net on rough edges that may result in tears and subsequent loss of fish. This includes both external and internal weights as well as any attachment points and other parts of the infrastructure. This also includes any harvesting, feeding or grading equipment that might be used on or around the site.

Not only is it important for equipment in contact with the containment net to be properly designed, it is important for the operator to regularly ensure that equipment is in good repair and has not been fouled with marine growth. Heavily fouled equipment creates an increased potential for snagging and tearing nets.

Photograph # 6

A review of the containment structure.

In investigations of incidents where fish have been lost or suspected losses have occurred, it has been found that in some cases tears and subsequent loss of fish can be attributed to improper weighting or through contact with various components of the net weighting or system anchoring points. Industry is continually reviewing and improving these aspects of containment structures.

Net cage Inventory and Audits:

Each net cage must have an inventory control number permanently attached and the operator must be able to provide complete records for each net cage. In 2006, one site was found to be deficient where one net did not have the inventory number permanently attached. During the audit at that site, it was noted that the net testing results were not complete.

Photograph #7

Tag on net cage used for identification.

Net Cage Attachment Points and Jump Nets:

The Aquaculture Regulation specifies that the primary point of attachment for net cages is at the water line rope. The water line rope is designed to support the heavy load of a containment net. Secured to this water line rope are numerous reinforced tie-off points that take the bulk of the strain on the nets once they are deployed. These are the primary attachment points for the containment net and are required to be secured to the walkway with lines that are sound and adequate to withstand the strain of the net. Nets should not be supported by the stanchions or uprights as these are not designed to withstand the load and can fail under extreme conditions. In 2006, inspectors found that all sites were in compliance with this requirement.

Jump nets are the portions of net that extend above the water and are designed to prevent fish from jumping out of the containment system. The regulation specifies that the height of these jump nets must extend at least one meter above the surface of the water. In 2006, a deficiency was noted at one site where the jump nets were not at the required one meter height.

Photograph # 8

Net cage properly tied off at the water line.

Net Weights and Attachment Points:

The weighting system must be designed so that net weights are sufficient to prevent excess billowing of the net. It is also important to ensure that weights are evenly distributed at a sufficient number of points along the net for equal weight distribution which prevents point loading on the containment net.

A taut and properly weighted net is important, as billowing nets are subject to becoming snagged and may be more susceptible to tears or damage from predators. In 2006, one site was found to have insufficient weight to prevent excess billowing.

Mesh Size and Net Storage:

Containment nets with varying mesh sizes are used during a grow-out period. As the fish increase in size, they are moved into bigger containment nets with larger mesh. The farm operator is required to ensure the net mesh is always kept to a size that is small enough to contain the smallest fish. Alternatively, an operator may have to grade the fish prior to or when moving the fish into a pen with larger mesh size to avoid losing smaller fish. There were no deficiencies noted with respect to this requirement during either inspection cycle.

Ultra-violet rays can degrade containment nets. Failure to properly cover a net can expose the net to harmful ultra-violet rays. Net weakened in this manner can be easily over-looked during servicing and testing. The regulations require that storage of nets on dry land must be done in a manner that prevents exposure to ultra-violet rays.

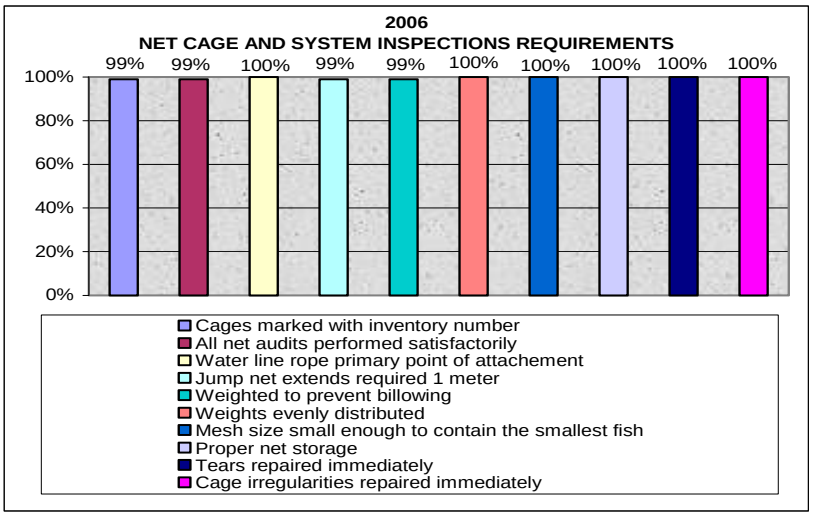
In 2006, 30 out of the 77 sites inspected stored containment nets on site. In all cases these nets were in compliance with requirements and stored in a manner to minimize deterioration.

Photograph # 9

Net properly bagged and protected from ultra-violet rays.

The following graph illustrates compliance rates with the requirements for net cage installation, configuration, storage, and inspections as described in the above sections.

Graph 13



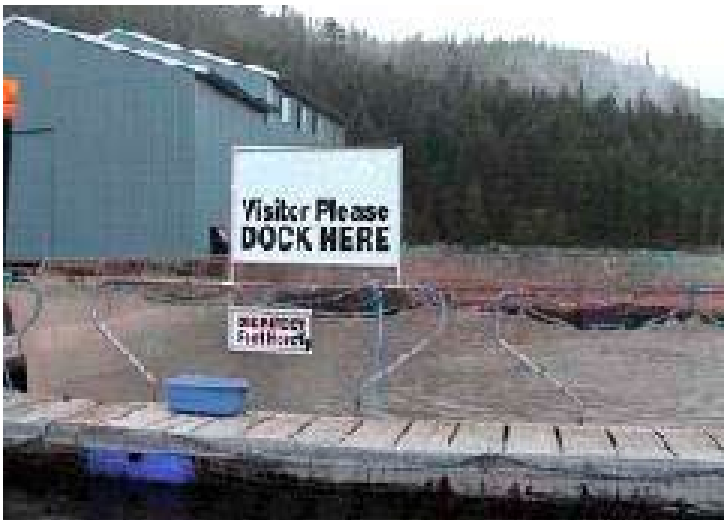
I. Boat Docking

To reduce or eliminate potential damage to net cages from vessels travelling to and from farms, a specific docking site for vessels must be identified on the farm site. The regulation requires this docking site to be designed or located in a manner to prevent propeller damage to the cage systems and must be marked with a highly visible sign.

In 2006, operators at all sites inspected were able to identify designated docking areas located in an area to prevent net damage and had erected signs directing boat traffic to these areas.

The regulation also requires that net stanchions and net cage railings are not used to moor large vessels that could cause damage during strong wind or tidal exchanges. Vessels were considered appropriately moored at all farm sites where inspectors observed vessels.

Photograph # 10



Properly designated and signed vessel docking area.

J. Fish Handling

Catch Nets:

The Aquaculture Regulation requires the use of catch nets when operators are conducting higher risk activities such as transporting, harvesting, grading, sampling and/or moving fish. Catch nets act as a back-up and help prevent accidental loss of fish in the event of human error or equipment failure.

In 2006, activities were occurring at 35 sites where the use of catch nets was required. All 35 sites were in compliance.

Photograph # 11

Grading operation covered with catch net to prevent accidental loss of fish.

Spotters:

Another preventative measure that the Aquaculture Regulation requires is the use of spotters during high risk activities. A spotter is a farm employee who has been assigned the specific task of visually watching for any event during a high risk activity that might, in any way, contribute to an escape of fish. Ideally, spotters should be experienced farm employees that are familiar with the operation in progress and should not be engaged in other activities at the time. Depending on the event, it may be appropriate to have one or more individuals acting as spotters.

In 2006, activities were occurring at 35 sites where spotters were required. All 35 sites were in compliance.

Predator Control:

Although the Aquaculture Regulation does not specify that finfish farm operators must deploy predator controls, it is expected that farm operators will initiate measures against predator attacks where necessary.

The Aquaculture Regulation requires that if a pattern of predator attacks is established, holders must initiate measures to prevent net damage and loss of fish. Failure to comply with these requirements could be viewed as failure to take reasonable measures to prevent an escape.

Most farm sites inspected had some measure of predator deterrent in place; in some cases, two or more systems were in place. Common types of predator systems include predator nets, shark guards, and bird exclusion netting above water.

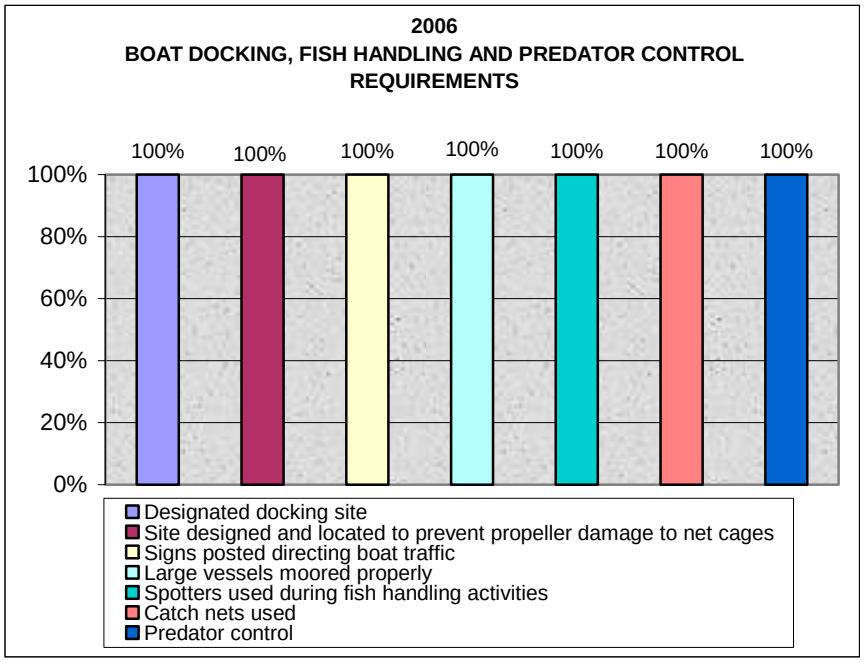
During the 2006 inspection cycle, inspectors found 16 sites where a pattern of predator attacks was sufficient to require that the operator implement measures to prevent containment structure damage. All operators had implemented such controls.

Photograph # 12

Bird netting used for predator control.

The following graph indicates compliance with boat docking requirements, use of spotters and predator control.

Graph 14



Compliance Rates for 2006 – Regulatory and Licensing Requirements

Part #2

MOE Requirements

A. Best Management Practices Plan

As of March, 2003, all farm sites required a Best Management Practices Plan (BMP) in accordance with the provisions of the Finfish Aquaculture Waste Control Regulation (FAWCR). Finfish farm operators were required to prepare and implement a BMP specific to each finfish farm. The FAWCR requires that the facility has applied to and is registered by MOE.

The objectives of the BMP under the FAWCR are:

- to ensure compliance with waste standards in the FAWCR;
- to provide for continuous reduction of potentially harmful discharges and quantity of wastes;
- management of potentially harmful materials;
- continual improvement in feed conversion ratios to reduce the amount of fish waste;
- prevention of spillages into the environment;
- prevention of the attraction and access of wildlife to feed foodstuffs and morts;
- prevention of access to containment structures by wildlife;
- minimization of spillage and odors from mort storage and disposal; and
- management of major fish kills via an emergency fish kill contingency plan.

The BMP offers a model of management practices that include the best structural and non-structural controls and operational and maintenance procedures available.

The FAWCR identifies a number of key elements that the BMP should include:

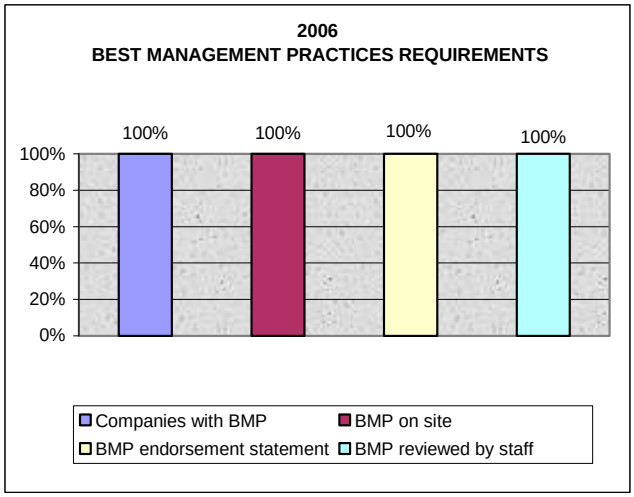
- a description of specific management practices and standard operating procedures used to achieve the objectives;
- a fish kill contingency plan;
- a statement that the BMP has been reviewed and endorsed by the operator, and reviewed and understood by the individuals responsible for implementation.

Fisheries Inspectors or Conservation Officers examine the BMP on site to ensure that the plan correctly identifies the elements that are prescribed in the regulation. In addition, the inspector may review parts of the plan to determine if key points within these elements are included.

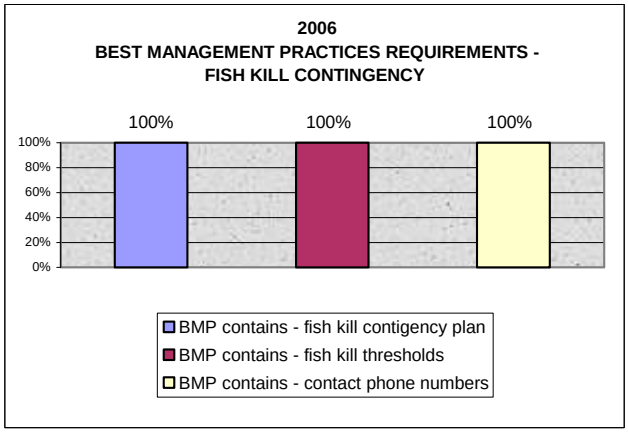
At all sites inspected during 2006, company officials were able to verify that a BMP had been developed and was available for inspection. Inspectors were able to determine that all sites met the objectives and key elements in their BMP.

The following series of graphs illustrate the conformity levels to the various components of the BMP requirements.

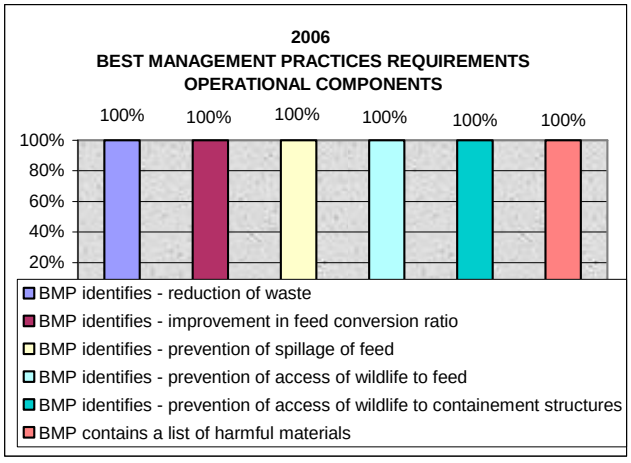
Graph 15



Graph 16



Graph 17



B. Blood Water Disposal

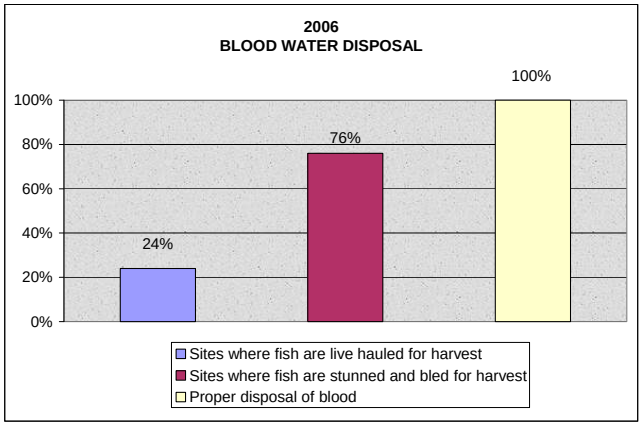
In an effort to maintain the high quality of farmed fish, salmon farmers rely on two methods to deliver their fish to the processing facility in prime condition. One is using a live haul vessel where the fish are harvested and delivered live, while the other is a stunning and bleeding operation carried out either on site or during delivery. Intentional discharge of untreated blood water to the environment is not permitted.

Blood water associated with a stunning and bleeding operation has a very high biochemical oxygen demand (BOD) and can negatively impact dissolved oxygen levels in the marine environment. It has been suggested that the release of blood water to the environment may result in disease transmission. Predators may also be attracted by released blood water.

Disposal methods for the blood water include transfer into mort containers, or transport and disposal of blood water at a processing facility.

In 2006, there were no deficiencies reported at the 77 sites inspected with respect to disposal of blood water. Twenty-four percent of site operators utilized a live haul system and the remaining 76 percent conducted a stun and bleed operation during harvest.

Graph 18



C. Net Cleaning Waste Disposal

Net Treatment:

Predator and containment nets may be chemically treated in order to increase their longevity and strength as well as to reduce fouling by marine plants and organisms. Typically, treatment consists of dipping the containment net into an approved antifoulant solution.

Net Cleaning:

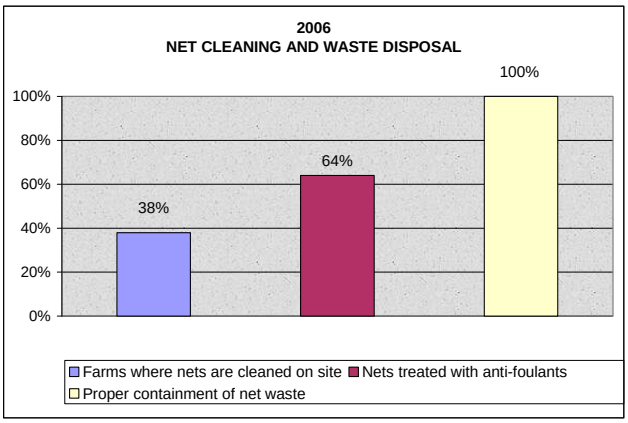
The frequency of net cleaning is largely dependent on the degree and condition of antifoulant treatment as well as the environmental conditions at the grow-out site where the nets are deployed.

Typically, nets are cleaned at least once a year. The cleaning process is necessary to allow unrestricted flow of water through the net cage as well as to reduce the weight and resulting strain on the net cage and support equipment. Net cleaning removes mussels, algae, and other materials that have fouled the nets and, in the case of treated nets, will also remove some of the antifoulant.

The waste water and debris generated through the net cleaning process, if completed on site, may have a negative impact on oxygen levels if released to the marine environment and so must be contained.

No deficiencies in containment requirements were observed in 2006.

Graph 19



Photograph # 13

On-site net cleaning drum system.

D. Footbath Waste Disposal

Footbath disinfectants are utilized at farm sites to minimize the transfer of disease from farm to farm, as well as disease transfer within a farm. Commonly used footbath solutions are virkon, ovadine and bleach. Over time, especially when exposed to sunlight, a disinfectant's effectiveness lessens and it becomes necessary to refresh footbaths. Depending on the solution used, the period of time between refreshing the foot baths varies but most footbaths are replaced on a weekly basis.

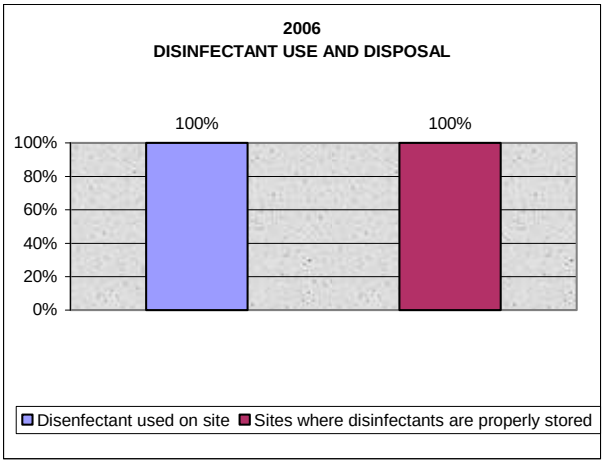
Photograph # 14

Footbath with disinfectant.

In order to safely manage the disposal of used disinfectants, footbath materials must not be capable of causing harm or injury to plant or animal life forms in the marine environment. Any discharge or storage must meet the requirements of the *Environmental Management Act*.

Disinfectants were in use at all farm sites inspected in 2006 and were properly disposed of directly into the mort containers.

Graph 20



E. Mort and Refuse Disposal

Mort Disposal:

Fish mortalities, or morts, are fish that have died prior to harvest due to any number of reasons including stress, plankton blooms, predator strikes or disease. Due to the high number of fish raised at fish farms, morts are anticipated and regularly encountered. It is important not only from a health perspective to remove morts on a regular basis but also from a predator avoidance perspective. Mortalities left in the net cages can attract predators that may, in turn, damage nets in their attempt to access the morts.

For these reasons it is important that the farm operator implement a regular mort collection program. At all the farms inspected, mortalities were collected by divers on a regular basis.

Morts are generally stored on site in sealed containers some distance from the grow-out operation and remain there until final collection for disposal. Collection times vary from daily to every two months as required, and in some cases morts are removed immediately (no on-site storage).

At all farms inspected in 2006, the morts collected were delivered to disposal companies off site.

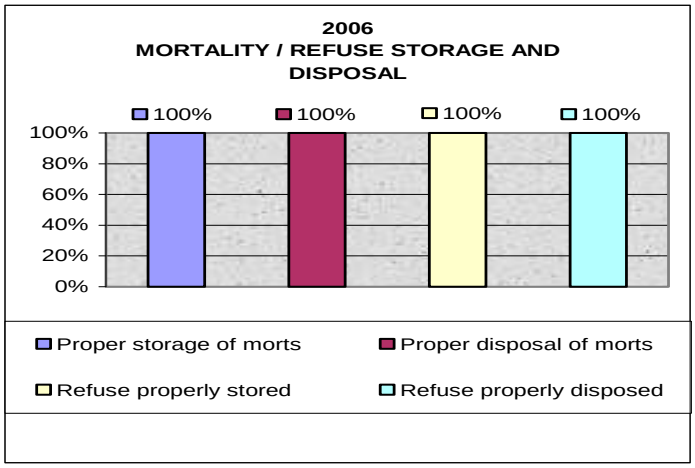
Refuse Disposal:

Operators at the farms inspected removed domestic and/or industrial refuse produced on site to approved landfills on either Vancouver Island or the Lower Mainland.

In 2006 there were no issues identified with refuse storage or disposal requirements.

The following graph illustrates compliance with the requirements for storage and disposal of fish mortalities and refuse.

Graph 21



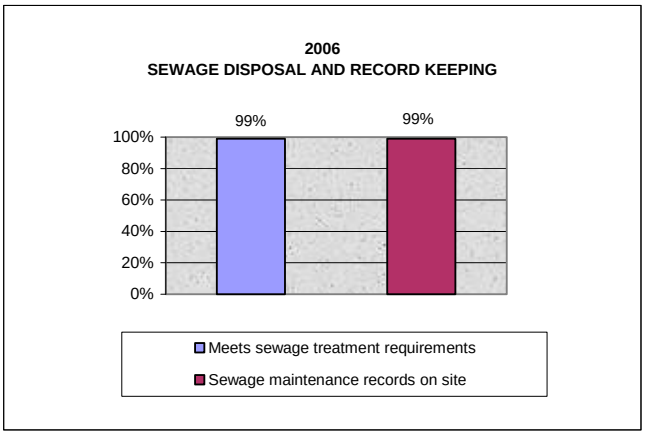
G. Sewage Treatment, Disposal and Record Keeping

The majority of fish farms have on-site staff accommodations, and collect, treat and discharge sewage at or near the farm location. Untreated sewage elevates biochemical oxygen demand which may negatively impact the marine environment.

The FAWCR permits discharge of domestic sewage under specific circumstances; it is not to exceed 2.5 cubic meters per day, it must be treated by holding in a septic tank for two days (or a device other than a holding

tank with suspended solids not exceeding 130mg/l) and the location of the sewage discharge point must be at a depth of no less than 15 metres below the water surface. All construction, operation and maintenance of sewage treatment and disposal must be maintained. In 2006, inspectors found that one operator failed to meet the sewage facility requirements and did not have sewage maintenance records on site.

Graph 22



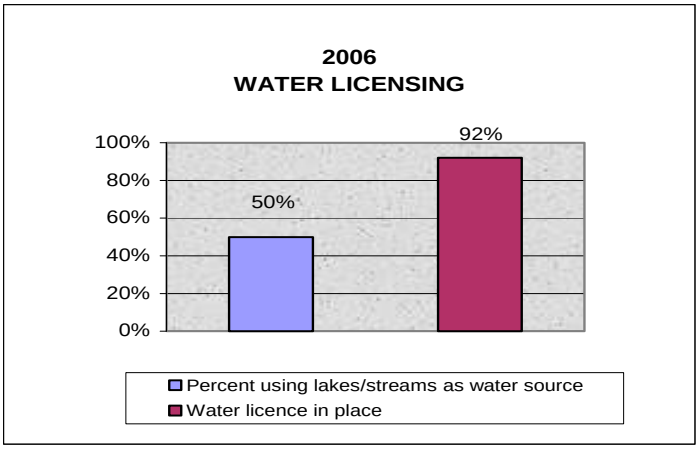
H. Water Licensing

Fish farms that use fresh water from a lake, river or stream are required to hold an authorization issued pursuant to the *Water Act*.

Finfish farms may obtain their domestic water supply from a variety of sources. These include rain water, water from lakes or streams, well water and water transported to the site. Some operations inspected during 2006 relied on a combination of these sources.

In 2006, there were 39 sites that used either lake or stream water for their domestic water supply or relied upon a combination of lake/stream water and other sources. Operators at 36 of these sites were in compliance with water licensing requirements.

Graph 23



I. Wildlife Trapping - Predator Prevention and Response

Predators such as seals, sea lions and dogfish can cause significant tears in the containment nets and have been suspected as the primary cause for a number of escapes. It is the responsibility of the farmer to ensure that protective measures are implemented to prevent predator attacks.

If a farmer does not take appropriate measures against increased predator attacks, this may be construed as not taking reasonable precautions to prevent escapes, an offence under the Aquaculture Regulation.

Typically, salmon farm operators will use non-lethal methods to control predators at the farm site. These include the use of predator nets, shark guards, bird netting, electric fences and ensuring nets are kept taut. Despite these precautions, persistent predators may have to be destroyed. This is accomplished either through trapping or with a firearm.

Hunting and trapping is carefully regulated under the *Wildlife Act*.

In 2006, one operator trapped and relocated a small predator (mink) without a permit.

J. Fuel Product Use, Storage and Containment

Photograph # 15

Diesel fuel with 110% containment

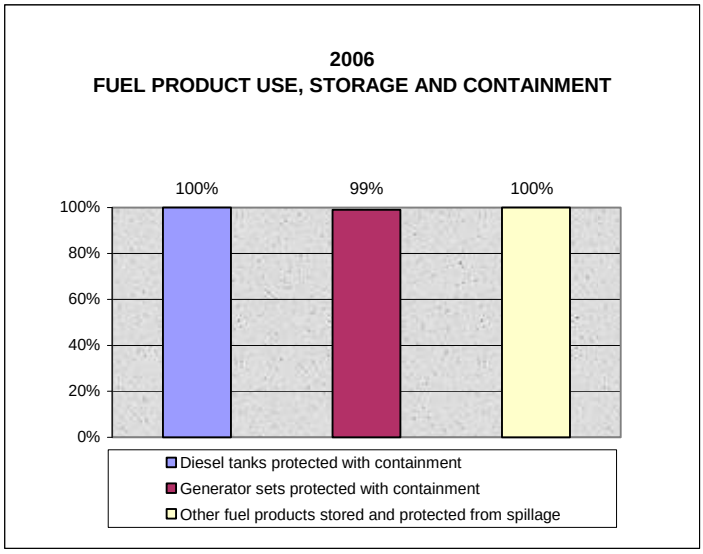
Photograph # 16

Fuels properly contained.

Storage of fuels is common at finfish farms as fossil fuels are widely used to run generators for electricity, boat engines and heat. The *BC Fire Code* requires that a spill containment barrier capable of containing 110 percent of the volume of the fuel being stored, or another adequate form must be in place.

In 2006, all sites inspected had taken measures to ensure that proper secondary containment systems had been installed around diesel storage containers. One site did not meet the 110 percent requirement around a generator. However, all sites had fuel products securely stored and protected from spillage.

Graph 24



K. Environmental Management Practices

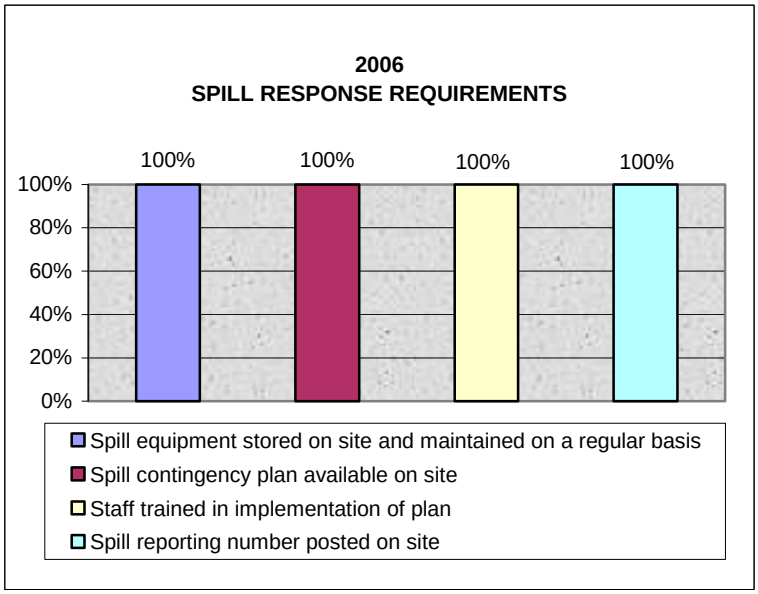
Many farm sites store a variety of petroleum products, chemicals and other products that, if released into the surrounding environment, could potentially have a negative impact. In an effort to minimize the severity of any spill, companies have developed spill contingency plans and have equipment that would assist in managing any accidental spill.

Photograph # 17

On-site spill kit and cleanup equipment.

In 2006, operators at all sites had a spill contingency plan available, equipment was on hand and maintained to support this plan, staff were properly trained in its use, and a spill reporting number was posted.

Graph 25



2006 Compliance Numbers – Sites In Compliance

MAL Requirements

Table 1 provides a detailed summary of issues examined and the number of sites found in compliance during the 2006 inspection cycle. Appendix 8 provides a comprehensive report of the deficiencies noted for each company during this inspection cycle.

The following information is based on the annual above-water inspections and does not include any non-compliance issues that may have been identified during the subsurface inspection and audit program.

Information and findings of the subsurface inspection and audit program are provided later in this report.

TABLE #1:

MAL Compliance Issue Assessed On Site	Inspection Compliance 2006
Management Plan Compliance with Aquaculture Licence	
• Biomass requirements	77 of 77
• Approved species on site	77 of 77
• Infrastructure	77 of 77
• Special provisos	77 of 77
• Licence is current	77 of 77
Escape Reporting	
• Compliance with reporting escapes or suspected escapes since last annual inspection. (Those that did not have an incident are not included in the statistics)	57 of 57
Inventory and Inspection Records	
• Stock records kept for each containment facility	77 of 77
• Records are complete	75 of 77
• Records kept on site	77 of 77
Daily Above-Water Inspections	
• Daily inspections of cage support systems completed	75 of 77
• Daily inspections recorded in the log	77 of 77
• Daily records kept on site	77 of 77
Underwater Inspections of Active Net Cages	
• All underwater inspections completed by an approved method	77 of 77
• Approved underwater inspections conducted on new net cages prior to introduction of fish	77 of 77
• Net cages inspected every 60 days	76 of 77
• Net cages inspected after any activity that increased risk of escape	77 of 77
• Net cages inspected in the event of an incident after a routine activity that causes the holder to suspect an increase in net failure	77 of 77

Required Net Cage Maintenance Records	
• Net cage records kept for each cage	77 of 77
• Net cage records contained the following required elements	
• Inventory control number	77 of 77
• Dimensions	77 of 77
• Mesh size	77 of 77
• Accumulated time in water since last inspection	77 of 77
• Description and date of each underwater inspection	77 of 77
• Description and date of all repairs including reasons since last out of water servicing	77 of 77
Out of Water Records	
• Recent out of water service records on site	70 of 71
• Record complete	69 of 70
Best Management Practices Plan (BMP)	
• Company developed a BMP	77 of 77
• BMP on site	77 of 77
• BMP elements	
• Finfish delivery	77 of 77
• Net cage and bag cage changing	77 of 77
• Boat operation and maintenance	77 of 77
• Towing of active structures	77 of 77
• Management of predation	77 of 77
• Recovery of morts	77 of 77
• BMP included a statement that BMP has been reviewed and endorsed	76 of 77
• BMP included a statement that individuals responsible for implementing the plan understood BMP and received training	77 of 77
Escape Response	
• Holder has written escape response plan	77 of 77
• Escape response plan posted in a visible location	77 of 77
• Location and content known by all staff	77 of 77
• Plan includes step by step procedures for preventing further escapes	76 of 77
• Plan identifies procedures to report escapes	77 of 77
Therapeutant Use and Records	
• Drug administrative records kept include	
• Aquaculture licence number and holder's name	77 of 77
• Location of facility	77 of 77
• Species of fish	77 of 77
• Name of veterinarian	77 of 77
• Log that names the drugs, specifies treatment schedule, date of last treatment and name and signature of person responsible for treatment	76 of 77

• Statement provided to processor includes drug administrative information	37 of 37
• Statement to processor complete	37 of 37
Net Cage and System Inspections	
• All cages marked with inventory number	76 of 77
• All net audits performed satisfactorily	76 of 77
• Water line rope the primary point of attachment	77 of 77
• Jump net extends the required 1 meter	76 of 77
• Sufficient weight to prevent billowing	76 of 77
• Net cages weighted at sufficient points for equal distribution	77 of 77
• Mesh size small enough to contain the smallest fish	77 of 77
• Nets stored on site are stored in manner to minimize ultra-violet deterioration	30 of 30
• Tears repaired immediately	77 of 77
• Irregularities in the cage supporting system repaired immediately	77 of 77
Boat Docking	
• Designated docking site for boats	77 of 77
• Site designed and located to prevent propeller damage to the net cages	77 of 77
• Signs posted directing boat traffic	77 of 77
• Large vessels moored properly	43 of 43
Fish Handling	
• Spotters being used during fish handling activities	35 of 35
• Catch nets used	35 of 35
Predator Control	
• Measures implemented to prevent loss of stock and containment structure damage	16 of 16

MOE Requirements

Table 2 provides a detailed summary of issues examined and the number of sites found to have met the MOE requirements during the 2006 inspection cycle. Appendix 8 provides a comprehensive report of the deficiencies noted for each company during this inspection cycle.

TABLE #2:

MOE Issue Assessed On Site	Inspection Elements 2006
Best Management Practices (BMP)	
• Companies have developed a BMP	77 of 77
• BMP on site	77 of 77
• BMP with a statement that it has been endorsed by the holder	77 of 77
• BMP has been reviewed by staff at the facility	77 of 77
• BMP includes a fish kill contingency plan	77 of 77
Fish kill plan contains the following elements	
• Fish kill thresholds	77 of 77
• Contact phone number	77 of 77
BMP identifies how the operation meets the following objectives	
• Reduction of number and quality of wastes	77 of 77
• Improvement in feed conversion ratio	77 of 77
• Prevention of spillage of feed	77 of 77
• Prevention of access of wildlife to feed	77 of 77
• Prevention of access of wildlife to containment structures	77 of 77
• BMP contains a list of harmful materials	77 of 77
Blood Water Disposal	
• Farms where fish are live hauled for harvest	19 of 77
• Farms where fish are stunned and bled for harvest	58 of 77
• Proper disposal of blood	58 of 58
Net Cleaning and Waste Disposal	
• Farms where nets are cleaned on site	30 of 77
• Farms where nets treated with antifoulants are used	50 of 77
• Proper containment of net waste	77 of 77
Disinfectants Use and Disposal	
• Disinfectants used on site	77 of 77
• Disinfectants properly stored during use	77 of 77
Mort Storage and Disposal	
• Morts properly stored	77 of 77
• Morts properly disposed	77 of 77

Refuse Storage and Disposal	
• Refuse properly stored	77 of 77
• Refuse properly disposed	77 of 77
Fuel Product Use, Storage and Containment	
• Diesel tanks protected with containment	77 of 77
• Generator set protected with containment	76 of 77
• Other fuel products securely stored and protected from spillage	77 of 77
Sewage Treatment and Disposal	
• Sewage facilities on site meet the requirements	76 of 77
• Sewage maintenance records kept on site	76 of 77
Spill Response	
• Spill equipment stored on site and maintained	77 of 77
• Spill contingency plan available	77 of 77
• Staff trained in implementation of the plan	77 of 77
• Spill reporting number posted	77 of 77
Water Use and Licensing	
• Lakes or streams used for domestic water	39 of 77
• Water licence in place	36 of 39
Wildlife Predator Trapping	
• Number of sites where wildlife have been trapped	6 of 77

TABLE #3: Number of Sites Inspected – MAL & MOE Requirements

Company	2006
1331735 Ontario Ltd. (Mainstream Canada Ltd.)	9
Creative Salmon Company Ltd.	4
EWOS Canada Ltd. (Mainstream Canada Ltd.)	9
Grieg Seafood BC Ltd.	5
Marine Harvest Canada Inc.	12
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	11
Omega Pacific Seafarms Inc.	1
Pan Fish Canada Ltd.	14
Saltstream Engineering Ltd.	1
Stolt Sea Farm Inc. (Marine Harvest Canada Inc.)	2
Target Marine Aquaculture Ltd. (Grieg Seafood BC Ltd.)	8
Yellow Island Aquaculture (1994) Ltd.	1
Totals	**77**

Other Compliance and Enforcement Activities

Pre-Inspections for New Applications

When the licensing authority approves a new licence application, a condition of licence prior to any introduction of fish is a satisfactory pre-operational inspection by a MAL inspector to ensure compliance with all regulatory and licence requirements. This includes a review of all components identified in the applicant's management plan, compliance with legislative and regulatory requirements, and verification that the company has met all general licence terms and conditions and any additional conditions that may have been included.

Licences for net cage operations also have the following special proviso appended. MAL inspectors verify that these inspections have been undertaken as required.

- An inspection by a qualified anchoring specialist* must be completed for systems installed since November 1, 2001, on newly licensed sites and/or for any facility alterations or additions approved after May 1, 2004.
- For installation of systems at new facilities, the inspection must be completed prior to the introduction of fish. For sites that are altered or added to, inspections must be completed prior to the utilization of newly installed infrastructure. This inspection should confirm that the design, equipment used and installation of the facility is consistent with the anchoring system layout diagram attached to the approved management plan, and the specifications in Appendix 2 of the Aquaculture Regulation. Proof of this inspection must be retained by the company and must be made available upon request by a Fisheries Inspector.

Subsurface Inspection and Audit Program

In previous years the ministry has conducted subsurface inspections using divers at randomly selected fish farms to assess underwater farm infrastructure to ensure the operator is in compliance with regulatory requirements.

Subsurface inspections and audits by divers are generally unannounced and consist of an experienced dive team along with a MAL inspector who coordinates the inspection activity of the dive team.

Divers concentrate on collecting information on the condition of net pens, net pen repairs, design and installation of the anchoring system, net weight design and installation, condition of lines and associated hardware along with any other significant below-water features. The duration of the dives vary according to underwater visibility, size, depth, and condition of the net cages. In some cases a complete day may be spent viewing a system while in other situations it may not be possible to view the entire site and a smaller representative portion of the system will be selected for an intensive audit.

To increase the effectiveness of the audits the divers are able to communicate directly with the MAL inspector on the surface who is linked through a video and voice communication system. The ability to communicate with the divers allows the inspector to direct the activities. This enhances the inspection efforts as well as providing the inspector with the opportunity to view the video at a later date to review compliance components.

The subsurface inspections and audits that were scheduled for the 2006 inspection cycle were completed early in 2007 at ten selected sites. The results of these audits are included in this annual report.

The following table identifies the company, site name and general area of the dive locations of the 2006 subsurface inspection and audit program:

TABLE #4

Company Name	MAL REF #	General Area	Site Name	Date Audited
Yellow Island Aquaculture Ltd.	216	Discovery Passage	Yellow Island	January 12, 2007
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	1626	Calm Channel	Church House	January 23, 2007
Omega Pacific Seafarms Inc.	270	Barkley Sound	Jane Bay	February 13, 2007
Marine Harvest Canada Inc.	1586	Knights Inlet	Doctors Island	February 21, 2007
Grieg Seafood BC Ltd.	1825	Clio Channel	Bennett Point	February 22, 2007
Pan Fish Canada Ltd. (Marine Harvest Canada Inc.)	892	Goletas Channel	Bell Island	March 1, 2007
Totem Sea Farm Inc.	247	St. Vincent Bay, Jervis Inlet	Totem	March 14, 2007
Target Marine Aquaculture Ltd. (Grieg Seafood BC Ltd.)	1698	Ahlstrom Point, Jervis Inlet	Ahlstrom Point	March 15, 2007
Tofino Aquafarms Ltd. (Creative Salmon Company Ltd.)	776	Clayoquot Sound	Dawley Pass	March 21, 2007
Ewos Canada Ltd. (Mainstream Canada Ltd.)	540	Clayoquot Sound	Saranac Island	March 22, 2007

Some of the issues identified during these subsurface inspections and audits are listed below.

1. Net tension was an issue in some cases. Excessive billowing can be a concern as it increases potential for net snagging and subsequent tearing.
2. Tie-off points were identified as possible issues where the tail end of the knot may not have been adequately secured.
3. Some unused anchor weights and lines were left in the water increasing potential for net snagging or entanglement.
4. Excessive build-up of debris that can potentially come into contact and damage the containment nets.
5. Effectiveness of predator nets may be reduced due to the presence of holes and ineffective weighting systems causing insufficient clearance between the containment and predator nets.
6. At some sites company officials were asked to review the quality of on-site net repairs.
7. The build-up of marine growth on lines, hardware and infrastructure creates potential snag points and unnecessary drag in high current situations.
8. There was one situation where an operator was asked to review the attachment points to ensure the waterline rope on the net cage was the primary point of attachment and that net loading was properly distributed.
9. In some cases net cages contained mortalities that had not been removed.

Where deficiencies were noted, farm site operators were given 30 days to notify MAL in writing that corrective measures had been implemented.

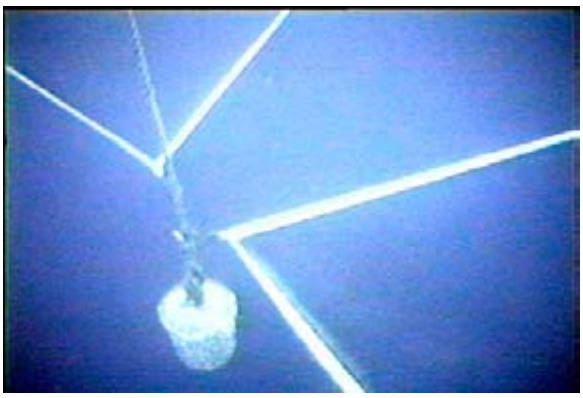
Photograph # 18

Dive contractor preparing for subsurface inspection and audit.

Subsurface Inspection and Audit Photographs

(Photograph #19)

Use of internal weights: in this case feed bags that have been filled with beach sand.



Central external weight with tie-down lines going to four net pens.

Typical hole repaired at a repair facility.

Holes in the predator net system.

Typical external weights.

25 pound lead internal net weight checked for wear against net.

Environmental Auditing

During 2006, MOE conducted chemical and biological sampling of bottom sediments at selected farm sites. Where chemical standards are exceeded, biological samples for marine benthic organisms are collected for compliance purposes. Results of the chemical and biological sampling are published as individual Data Reports for each calendar year starting from 2000 and are available on DVD diskette by contacting the MOE Nanaimo Office at (250) 751-3100.

The following table lists farm sites that were audited for compliance with environmental standards in 2006:

TABLE # 5 – 2006

Company	MAL REF#	ILMB Landfile #	Farm Site	General Area
Creative Salmon Company Ltd.	776	1405980	Baxter Islets	Clayoquot Sound
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	112	1404284	Centre Cove	Kyuquot Sound
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	1299	1407385	Thorpe Point	Quatsino Sound
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	1059	1403328	Sargeaunt Pass	Broughton Archipelago
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	1338	1403748	Mahatta East	Quatsino Sound
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	1238	1406961	Mahatta West	Quatsino Sound
Pan Fish Canada Ltd. (Marine Havest Canada Inc.)	1136	1406628	Shaw Point	Johnstone Strait
Ewos Canada Ltd. (Mainstream Canada Ltd.)	227	1403647	Bawden	Clayoquot Sound
Ewos Canada Ltd. (Mainstream Canada Ltd.)	520	1403980	Bedwell	Clayoquot Sound
Grieg Seafood BC Ltd.	1825	1411154	Bennett Point	Broughton Archipelago

Summary of Recent Results:

Farms must undertake, and submit to MOE for review, results of their environmental monitoring programs, the requirements of which are specified under the FAWCR. In 2006, 93 percent of farms were in compliance with submitting the required scientific monitoring information to MOE for evaluation. One farm did not comply with the requirements in the FAWCR prior to restocking.

Investigations

Under provincial legislation, MAL Fisheries Inspectors or MOE Conservation Officers have six months from the date of the event to investigate and, if appropriate, pursue enforcement sanctions. Investigations are considered highly confidential until concluded.

Results of investigations may lead to one or more of the following outcomes:

- determination that the incident (i.e. reported escape) or possible violation does not warrant any enforcement sanction;
- issuance of a written warning;
- issuance of one or more violation tickets;
- referral to appropriate regulatory agencies such as MOE, Integrated Land Management Bureau (ILMB) or DFO;
- submission of a report to Crown Counsel with recommended charges; or
- recommendation to the licensing authority for Aquaculture Licence suspension or revocation proceedings.

Investigations:

The ministry uses case files to record and track inspection and investigation activities. Case files are initiated for every inspection that is completed whether there is a compliance issue or not. Case files are also used to track investigations, complaints or any non-compliance issues that have been identified during inspections or otherwise brought to the ministry's attention.

In 2006, a total of 77 inspections were conducted at active farms sites. A total of 238 case files pertaining to finfish aquaculture inspections and investigations (including escape or suspected escape incidents) were opened by MAL.

Six of these 238 case files were referred to MOE for investigation and follow up. The MOE Conservation Officer Service (COS) conducted investigations as a result of these referrals. Three investigations involved the unlicensed use of water. All three investigations resulted in applications being submitted and subsequent compliance with the Water Act. MAL also reported to COS a structure fire at a farm site where a fire destroyed a fuel shed, generator and compressor. This was referred to the Coast Guard as the appropriate response agency.

Two of the escape incidents that occurred in late 2006 were referred to COS in 2007; one investigation resulted in the issuance of a violation ticket and the other incident is still under investigation.

Status of investigations:

The following table shows companies that have been convicted or have received a warning ticket for non-compliance in 2006. The table does not include any case files currently under investigation by MAL or MOE compliance and enforcement staff. Most non-compliance issues are dealt with by providing written warnings in the form of a site inspection compliance report left at the farm site at the time of inspection or by way of a letter to the company with a list of deficiencies noted. Warnings issued to specific companies can be viewed in Appendix 8.

TABLE #6

Licence Holder	Act or Regulation	Date	Action	Fine
Grieg Seafood BC Ltd.	Fisheries Act Aquaculture Regulation - Section 34(1), Appendix 2 – Failure to follow Best Management Practices Plan	2006-02-01	Warning Letter	
Ewos Canada Ltd. (Mainstream Canada Ltd.)	Fisheries Act Aquaculture Regulation - Section 5(e), Appendix 2 (B) – Failure to record daily above-water inspection	2006-03-20	Warning Ticket	
Ewos Canada Ltd. (Mainstream Canada Ltd.)	Fisheries Act Aquaculture Regulation - Section 3(4) – Failure to take reasonable precaution Fisheries Act Aquaculture Regulation - Section 13 – Failure to repair nets immediately Fisheries Act Section 25(2) – Failure to comply with condition of Licence	2006-03-10	Warning Ticket	
Yellow Island Aquaculture (1994) Ltd.	Fisheries Act Aquaculture Regulation - Section 4(1) – Failure to report fish escape	2006-11-03	Violation Ticket	$173
Nutreco Canada Inc. (Marine Harvest Canada Inc.)	Fisheries Act - Section 25(2) – Failure to comply with condition of Licence	2006-11-10	Violation Ticket	$115
Marine Harvest Canada Inc.	Fisheries Act Aquaculture Regulation - Section 4(1) – Failure to report fish escape	2006-12-17	Warning Ticket	

Conclusion

Inspection results for the 2006 inspection cycle continue to demonstrate improvements in compliance rates for the finfish aquaculture industry. The industry has responded well to issues identified during previous years. It is anticipated that the industry will continue to strive for full compliance on all regulatory requirements.

Most issues noted during the 2006 inspection cycle were either of an administrative nature or were deficiencies that were correctable by staff at the farm sites.

Provincial government agencies are committed to ensuring the aquaculture industry meets our regulatory objectives in an environmentally sustainable and socially acceptable manner. The inspection cycle for 2007 has commenced and every active fin fish farm will be inspected.

Appendices

Service Agreement
on
Coordination of Compliance and Enforcement Programs

between

Ministry of Agriculture, Food and Fisheries,
Ministry of Water, Land and Air Protection,
Ministry of Sustainable Resource Management, and
Land and Water British Columbia Inc.

1. Agreed Upon Vision:

A sustainable aquaculture industry that meets high standards for environmental protection and has a high level of public confidence in the compliance and enforcement role of government.

2. Lead Agency Concept:

The Ministry of Agriculture, Food and Fisheries is the lead agency for aquaculture development in British Columbia. Critical functions and authorities also reside within the Ministry of Water, Land and Air Protection (MWLAP), the Ministry of Sustainable Resource Management (MSRM), and Land and Water British Columbia Inc. (LWBC), hereafter referred to as the "agencies".

The lead agency concept is designed to deliver services, permits and approvals to industry through a single window via service agreements, delegations of authority and pre-approval agreements with other agencies in all three levels of government.

3. Development of Service Agreement:

Provincial government representatives are committed to coordinating responsibilities in the area of compliance and enforcement to eliminate inter-agency overlaps, reduce duplication of efforts by single agency presence in the field for compliance activities, increase efficiencies, and to demonstrate a strong, integrated and accountable compliance and enforcement regime.

The agencies wish to identify and clarify respective roles regarding finfish and shellfish aquaculture compliance and enforcement activities, outline specific responsibilities, identify projected resource requirements, and develop protocols for dealing with issues that may arise on occasion.

3. Development of Service Agreement - continued:

This multi-signatory Service Agreement sets out the agreed upon approach between agencies of interest, outlines specific roles and responsibilities, training requirements, implementation timelines and required communication and protocols in responding to identified issues.

4. Goals of Service Agreement:

Development of this Service Agreement is based on the following common goals:

- efficient use of staff resources to minimize duplication;
- one window approach to aquaculture development;
- high level of compliance;
- early intervention to avoid non-compliance;
- effective enforcement, successful prosecution and rehabilitation where required;
- public confidence; and,
- transparency.

5. Performance Based Standards:

This Service Agreement recognizes that government is committed to the development of performance based standards in three key areas: waste management; fish health; and escape prevention. This Service Agreement also recognizes that agencies are working towards a performance-based management regime that acknowledges the key environmental standards.

Signatories to this agreement also acknowledge that application of a combination of regimes, including “rules-based” and “results-based” will be required on an interim basis, until government is satisfied that industry has either achieved or exceeded objectives in the areas of waste management, fish health and escape prevention.

6. Environmental Monitoring

For the purpose of this Service Agreement, it is agreed that environmental monitoring activities pursuant to the *Aquaculture Waste Control Regulation* will remain with the lead regulatory agency, MWLAP, with participation by MAFF Inspection staff. Similarly, the administration of the dive audit program will remain with the lead regulatory agency, MAFF.

6. Environmental Monitoring – continued:

Environmental monitoring activities are to be conducted by biological monitoring staff (technicians, biologists, statisticians) at MWLAP, and, for this reason, are not considered part of the Service Agreement. Specific environmental monitoring activities include:

- conducting reviews of industry environmental monitoring data;
- annual monitoring of sediments at salmon farms;
- development of appropriate sampling protocols and quality assurance/control programs;
- establishing priorities for ministry monitoring of sediments at salmon farms; and,
- conducting environmental sampling at salmon farms, providing feedback to facility.

The agencies agree to conduct joint environmental monitoring activities on site in order to achieve harmonization between compliance inspections and on-site activities. This agreement is subject to operational considerations such as scheduling.

The specific provision on Environmental Monitoring will be reviewed at the end of the first year to ensure identified objectives are being met in the most effective and efficient manner.

7. Compliance and Enforcement – Roles and Responsibilities:

For the purpose of this Service Agreement, it is agreed that MAFF has the lead role in compliance and that MWLAP has the lead role in enforcement. MWLAP will also assume the lead role in consultation with MAFF when environmental conditions at marine finfish facilities exceed the “trigger” level established in the *Aquaculture Waste Control Regulation*.

“Compliance” is defined as conducting the following activities:

- site specific management plan development;
- awareness, education, promotion and training activities;
- partnership and practices activities;
- monitoring, inspections and audits;
- administrative remedies pertaining to agency’s licensing authority;
- early intervention to prevent non-compliance;
- provision of data, samples, monitoring results, inspection reports, and fish escape reports to the lead enforcement agency based on a predetermined schedule; and,

7. Compliance and Enforcement – Roles and Responsibilities - continued:

- support for enforcement actions including development of procedures and provision of information, technical support and expert witness support for investigation to ensure the ability of MWLAP to achieve successful prosecution.

"Enforcement" is defined as carrying out the following activities:

- verifying and substantiating an alleged offence;
- recommending and implementing necessary enforcement responses.

Specifically:

a) MAFF Compliance staff will serve as the lead in developing site specific management plans and conducting all finfish and shellfish inspections, monitoring (subject to section 6) and audits on behalf of MWLAP, LWBC, and MSRM.

a) MWLAP Enforcement staff will serve as the investigative lead on all enforcement activities associated with formal prosecutions, court orders and administrative penalties for finfish and shellfish aquaculture on behalf of MAFF, LWBC and MSRM.

MAFF and MWLAP Compliance and Enforcement Managers will work with LWBC, MSRM and federal DFO officials to harmonize compliance and enforcement activities and develop a protocol on sharing information, participating in inspections and enforcement as required, and addressing common issues of interest.

8. Transition from Inspection to Investigation:

MAFF Compliance staff will contact MWLAP Enforcement staff to initiate an investigation when instance(s) of non-compliance by an operator requires further review or action by the lead agency for enforcement. Specific responses will be outlined in a matrix to be developed by respective Compliance and Enforcement Managers.

It is anticipated this transition will involve consultation, a request for shared inspections and/or a request to consider enforcement sanctions such as formal prosecutions. MAFF will provide a support role to MWLAP enforcement staff as required when a request for an investigation has been made.

8. Transition from Inspection to Investigation - continued:

For the purpose of this Service Agreement, MWLAP Enforcement staff and MAFF Inspection staff will regularly communicate on status of inspections and files and activities undertaken by either agency. MAFF Inspection staff may issue violation tickets as defined within the matrix. The matrix will indicate under which circumstances agencies must consult prior to proceeding with enforcement action.

Escapes:

- MAFF Compliance staff will attempt to visit sites within 72 hours of discovery of an escape incident. Where possible, particularly with escape incidents that are viewed as "significant", MWLAP Enforcement staff will attend jointly with MAFF Compliance staff.

- The role of MAFF Compliance staff will be to ensure appropriate measures have been implemented to preclude further escapes and provide technical support for the investigation where required.

- The role of MWLAP Enforcement staff will be to assess the state of compliance leading up to and including the actual event, and to conduct a legal investigation to determine the appropriate enforcement response.

Appendix I provides the detailed compliance continuum and breakdown of agency activities and responsibilities.

9. Communication and Protocols:

In order to ensure an environment of trust and respect, effective communication between agencies is necessary.

It is agreed:

- that compliance and enforcement activities and responsibilities are clearly defined and communicated with all staff;

- where an aquaculture activity has resulted in a significant impact of mutual concern, a jointly agreed upon briefing note will be forwarded to the Executive of all agencies. Inter-agency compliance and enforcement staff will work together to develop the briefing notes;

9. Communication and Protocols - continued:

- that information regarding an investigation being pursued by MWLAP staff is considered highly confidential and distribution must be limited to only those operational staff involved in the file. It is agreed that if charges are approved by Crown on an investigation, that Executive and Communications staff will be advised once charges have been sworn in and the company has been advised;

- that communication of data, samples, monitoring results and inspection reports between the agencies will be transparent, timely and direct, to allow either agency to make independent judgements about the state of compliance at any time;

- that all compliance and enforcement activities are complementary and mutually supportive in nature;

- that clear policies and procedures are created that will outline how agencies will communicate with one another; and,

- that the agencies will be mutually involved in the development of compliance strategies and workplans and agree that MAFF/LWBC/MSRM compliance staff (as appropriate) will be consulted on decision points regarding appropriate or possible enforcement responses by MWLAP staff.

10. Resolving Differences:

Where conflict arises relative to different opinions within the scope of relevant authorities or appropriate sanctions, it is agreed that differences are to be resolved as quickly and efficiently as possible by staff involved in discussions, and at a maximum, within 30 days of the issue being identified.

If satisfactory resolution can not be achieved, matters will be raised to the Regional Enforcement Manager for MWLAP, the Manager of Aquaculture Licensing and Compliance in MAFF, the Regional Manager of MSRM, and the Regional Director of LWBC.

If the issue in question can not be resolved within 14 days at this level, it will be brought forward to respective Assistant Deputy Ministers for discussion and resolution within 14 days.

11. Proposed Implementation Timelines:

January, 2002	-	Approval in principle to coordinated compliance and enforcement regime by Deputy Ministers.
February, 2002	-	Development of Service Agreement between agencies of interest.
Feb./March, 2002	-	Approval and sign-off of Service Agreement between agencies of interest. Approval by CORE review table.
March, 2002	-	Development of "Compliance Strategy Matrix".
April to July, 2002	-	Training for both staff – will be conducted by on-site training inspections and participating in one or more joint enforcement investigations
	-	Arrange appropriate powers and delegated authorities for staff.
April, 2003	-	Transition phase complete

12. Training Requirements:

Agencies agree that joint training for appropriate staff will be undertaken to deliver on this Service Agreement.

13. Delegation of Authorities:

To effectively administer the numerous statutes that apply to finfish and shellfish aquaculture, delegation or appointment of authority is necessary. MAFF Inspectors will require specific powers to collect inspection data and specific delegated authorities to inspect operations pursuant to both LWBC's and MWLAP's statutory framework.

In most cases, legislation appears to provide the appropriate Minister power to delegate authorities.

Appropriate agencies will work with the Aquaculture Licensing and Compliance Manager to move forward and expedite necessary approvals for MAFF Inspection staff to secure delegated authorities.

14. Resource Requirements:

For the inception of this Service Agreement, it is assumed that resource requirements between agencies will remain the same. Discussions on ability of the agencies to meet identified objectives will occur at the end of the first year of this agreement.

15. Transparency of Data:

This Service Agreement recognizes the requirement to provide the public with clear, transparent and accountable data on the state of compliance for finfish and shellfish aquaculture industries.

It is agreed that information collected and subsequent enforcement results will be collected and submitted in a joint agency report for distribution to industry and the public via an acceptable medium. The responsibility for completion of this Annual Report will reside with the appropriate Managers/Directors in the agencies. It is expected that the first joint report will be completed and published on or before April, 2003.

16. Service Agreement Requirements:

Immediate Requirements:

a) Agreement and sign-off on all requirements set out in Implementation Timelines, above.

b) Draft policies and procedures on how and when agencies will communicate.

c) Develop overall compliance strategy and workplan for inspection cycle commencing 2002, incorporating necessary training requirements in the workplan.

d) Confer necessary delegated authorities on MAFF Inspection staff.

Quarterly Requirement:

a) Meeting or conference call with respective Managers/Directors to discuss issues and resolve concerns.

b) A regular quarterly review meeting between appropriate Assistant Deputy Ministers and Deputy Ministers will be necessary to ensure the goals set out in this Service Agreement are being achieved.

17. Service Agreement Requirements - continued:

Annual Requirements:

a) All elements contained within the Service Agreement will be reviewed annually by respective Managers/Directors responsible for compliance and enforcement. Recommended changes to scope of agreement will be forwarded to appropriate Executive staff for discussion, agreement and implementation. Any agreed upon changes will be submitted via amended Service Agreement with appropriate signatory sign off.

b) Review of respective resources, compliance strategy and workplan elements will be conducted to determine if resources are appropriately allocated. Any reallocation requests will be forwarded to respective Executive staff for review, discussion and approval.

c) Respective agency Managers/Directors responsible for compliance and enforcement will measure the effectiveness of both the compliance and enforcement programs to ensure identified objectives are being met, including licensing and legislative. Adjustments in workplan activities will be modified as appropriate.

18. Termination of Service Agreement:

It is agreed that the Deputy Minister of Water, Land and Air Protection or the Deputy Minister of Agriculture, Food and Fisheries, the Chief Executive Officer for Land and Water British Columbia Inc. and the Deputy Minister of Ministry of Sustainable Resource Mangement may terminate this Service Agreement by providing 90 days notice in writing.

19. Signatories:

For Ministry of Agriculture, Food and Fisheries

Deputy Minister
Agriculture, Food and Fisheries

March 28/02
Date

For Ministry of Water, Land and Air Protection

Deputy Minister
Water, Land and Air Protection

March 28/02
Date

For Ministry of Sustainable Resource Management

C. Riordan

Deputy Minister
Sustainable Resource Management

March 28/2002
Date

For Land and Water British Columbia Inc.

Chief Executive Officer
Land and Water British Columbia Inc.

March 28/2002
Date

Appendix I

Service Agreement
Breakdown of Compliance Continuum
Activities by Agency

Ministry of Agriculture, Food and Fisheries

Awareness, Education, Promotion and Training Activities:
- advising public of the requirements of the law;
- consultations with parties affected by the law;
- communications strategies and public reporting of the compliance program;
- training programs for staff, clients and other interested parties.

Partnerships and Practices:
- developing cooperative partnerships and agreements contributing to government objectives, including building on and coordinating activities with federal authorities;
- building on reliance on professionally qualified persons;
- promoting industry best management practices (Codes of Practice/Conduct);
- promoting self-monitoring/auditing and reporting on practices;
- promoting International Certification.

Monitoring, Inspections, Audits:
- receiving information/data (with exception of environmental monitoring data) provided by finfish or shellfish sector and forwarding to appropriate regulatory agency;
- conducting all inspections and follow-up inspections (with exception of environmental monitoring program) and audits in the field on behalf of LWBC, MSRM and MWLAP;
- conduct follow up with operators on results of inspections and required remedial actions – identified non-compliance issues under MWLAP's regulatory authority will be referred for discussion and/or appropriate follow-up to MWLAP;
- acting as initial contact for public and industry complaints with respect to issues provided under finfish and shellfish licence terms and conditions, the provincial *Fisheries Act*, *Aquaculture Regulation*, and in the case of shellfish aquaculture, the *Land Act*; and,
- dependent on necessary mitigative measures for farms in excess of chemical trigger, MAFF Inspection staff may conduct monitoring and inspections.

Administrative Remedies:
- aquaculture licence suspension or cancellation proceedings.

Appendix I - continued

Service Agreement
Breakdown of Compliance Continuum
Activities by Agency

Ministry of Water, Land and Air Protection

Mitigative Measures:
- evaluation of remediation plans (where required) when farms exceed the chemical trigger prescribed in the *Aquaculture Waste Control Regulation*;
- implementation of mitigative measures (where required) for farms that have exceeded the chemical trigger and/or standards.

Enforcement:
- verifying and substantiating an alleged offence;
- implementing necessary enforcement responses on behalf of all finfish and shellfish aquaculture activities in the province, including finfish escapes. Enforcement activities are defined as warnings, tickets, administrative penalties, orders and formal prosecutions for governing statutes and regulations.
- Referring investigative files to the appropriate agency where it is determined that the application of administrative sanctions (penalties, license/tenure suspension/cancellation) are appropriate.

LWBC and MSRM

Both agencies will provide MAFF Inspection staff and MWLAP Enforcement staff with necessary information in completing activities. Examples may include digital aerial photographs and licence and tenure documents.

- Amendment of tenure boundaries and license conditions to resolve minor non-compliance.

- Suspension/cancellation of water licenses or land tenures and imposition and recovery of tenure fees for trespass.

- Support for enforcement actions including development of procedures and provision of information, technical support and expert witness support for investigation to ensure the ability of MWLAP to achieve successful prosecution.

Appendix II

Mutual Areas of Concern – Compliance and Enforcement[1]
MWLAP and MAFF

Issue:
Operation conducted within approved tenure boundaries
Farm sites well marked and posted
Access to water so as not to impede riparian rights
Diligent Use
Environmental Monitoring
Method and location of blood water and disposal
Method and location of net cleaning, waste treatment and disposal
Use of freshwater from a stream/lake
Feed Handling, type and volume
Method of mort disposal and location
Wildlife/predator destruction, disposal method and location
Firearm and ammunition storage and possession
Sewage treatment and disposal
Method and location of refuse storage and disposal
Spill containment for hazardous materials including footbaths
Environmental management
Chemical and fuel storage
Premises appropriately licensed for aquaculture
Culturing approved species with management plan(s)
Compliance with licence conditions and special provisos
Annual or quarterly reporting requirement compliance
Harvested product appropriately tagged (shellfish)
Product sold to registered Fish Processors
Appropriate use of tenure (mitigate laundering of illegally harvested product)
Record keeping requirements such as stock inventory, mortality records
Escape prevention and response programs
Boat operations
Net cage deployment, including net weighting and system anchoring
Predator avoidance plans including feed storage and predator control
Net maintenance, marking and record keeping
Daily inspections and logs
Administration of drugs
Compliance with management plans, including site configurations, biomass and approved species

[1] Mutual areas of concern also include both finfish and shellfish issues reviewed by MAFF and MWLAP on behalf of other agencies such as LWBC (i.e., operation conducted within approved tenure boundaries).

MINISTRY OF AGRICULTURE AND LANDS

FINFISH AQUACULTURE LICENSING POLICIES AND PROCEDURES FOR APPLICATIONS

Created: August 31, 2000
Revised: November 3, 2005

Note: This document is subject to regular review and revision.

1. Purpose

The purpose of the policy is to provide guidance to licensing authorities on the consideration of licences for the purposes of finfish aquaculture.

This policy is intended to assist in the exercise of discretion of the licensing authority and does not purport to alter any provisions of the *British Columbia Fisheries Act, the British Columbia Aquaculture Regulation*, or other relevant legislation.

2. Legislative and Regulatory Authority

British Columbia Fisheries Act
British Columbia Aquaculture Regulation

3. Decision-Makers

Minister of Agriculture and Lands: Fisheries Act
Director, Fisheries and Aquaculture Licensing and Compliance Branch: Delegated Authority
Section Head, Licensing Unit: Delegated Authority
Manager, Shellfish and Program Planning: Delegated Authority

4. General Principles Governing the Exercise of Authority to Issue a Salmon Aquaculture Licence

- Fairness
- Transparency
- Efficiency
- Accountability

5. Application for Salmon Aquaculture Licence

5.1. Application form and information required

The applicant must complete a Commercial Finfish Aquaculture Management Plan ("Plan"). The Plan is the application form for an aquaculture licence and also, where required, a Crown land tenure.

The Plan is submitted to the Ministry of Agriculture and Lands (MAL).

MAL may request further information that assists in the review and adjudication of the application.

5.2. Questions and Assistance

MAL's Aquaculture Development Branch will work with the applicant to provide any required assistance in completing the Plan.

6. Referrals

The Plan may be referred to other government departments and agencies for review and comment. These agencies may include Fisheries and Oceans Canada, the BC Ministry of Aboriginal Relations and Reconciliation, the BC Ministry of Environment, local governments, and other agencies and organizations as appropriate.

Where the application has a potential to impact a First Nation's rights or interests, First Nations will be consulted in accordance with the applicable First Nations consultation protocols.

7. Public notice and consultation

Reasonable efforts will be made to notify affected parties and provide them with an opportunity to comment on the application.

MAL may require the applicant to provide public notice of the proposed application in a manner that is acceptable.

8. Applicant's Response

The applicant will be provided with an opportunity to respond to any relevant material or information provided through the referral and public consultation process.

9. Decision

The Minister or delegated licensing authorities may, upon receipt of an application for a salmon aquaculture licence:

- issue a salmon aquaculture licence on terms and conditions that the Minister or licensing authority deems reasonable in the circumstances;
- deny the application; or
- decline to make a decision and refer the Plan back to the applicant for further information.

The applicant will be notified of the decision in writing, with reasons as appropriate.

10. Issuance of a Salmon Aquaculture Licence if in the Public Interest

Given that a salmon aquaculture licence confers a right to carry on the business of commercial aquaculture using a valuable public resource, a licence should only be issued if it is in the public interest to do so.

In deciding whether it is in the public interest to issue a salmon aquaculture licence, the licensing authority should consider the following paramount principles:

- Protection of public health and safety;
- Protection of the environment;
- Sustainable economic development.

11. Assessment of an Application for a Salmon Aquaculture Licence

In assessing an application, the licensing authority may consider any of the following:

11.1. Requirements of the *Fisheries Act and Aquaculture Regulation*

The licensing authority may consider whether the applicant has met all the requirements of the *Fisheries Act and Aquaculture Regulation*.

11.2. Completion of Forms

The Plan and any supporting documentation should be complete prior to the application being considered by the licensing authority.

11.3. Suitability of Site/Facilities for Proposed Aquaculture Operation

Based on the recommendations of Aquaculture Development Branch staff, the licensing authority should consider whether the proposed site has the biophysical capacity to support the proposed operation.

11.4. Past or Demonstrable Performance of Applicant

This may include a review of the following:

- Whether the operator has any previous convictions under the provincial *Fisheries Act, Aquaculture Regulation* or other relevant legislation;
- Whether the operator has been the subject of any aquaculture licence suspensions, cancellations or refusals to issue licences in accordance with Sections 18 or 19 of the *Fisheries Act*;
- Whether there are any outstanding Fisheries Act fees or royalties owed to the Crown in relation to any other aquaculture or commercial seafood licences currently or previously held by the applicant;
- The financial capacity and stability of the applicant to support the proposed operation, including liability insurance;
- That the applicant has appropriate and sufficient experience/qualifications in aquaculture operations.

11.5. Comments from Referrals

The licensing authority should consider the comments of all parties consulted in the referral process (refer to section 6, above).

11.6. Public Input/Comments

The licensing authority may consider the impact of the proposed operation on other uses, users and resources within the area of operation.

The licensing authority may consider the adequacy of public notice and public input.

The licensing authority may consider the nature and extent of local community support for the proposed operation.

11.7. Economic and Employment Benefits

The licensing authority may consider the significance of the contribution of the operation to the local and provincial economy. This may include an identification and review of the impact on secondary businesses and industries.

The licensing authority may consider whether the proposed operation will involve technological innovations or enhancements that may lead to improvements in the standards of operation for the salmon aquaculture industry.

11.8. Escape Prevention, Detection and Response

The licensing authority may consider the adequacy of the applicant's measures and plans regarding the prevention, detection and response to escapes of finfish.

11.9. Consultations with other individuals and agencies

The licensing authority may consult with other individuals or bodies as deemed appropriate. They may include:

- The Aquaculture Biologist, Aquaculture Development Branch, or equivalent;
- The Ministry of Agriculture and Lands Fish Health Veterinarian.

11.10. Other Relevant Factors

The licensing authority may also consider any other factors relevant to the specific circumstances of each case.

12. Terms and Conditions of Licence

The licensing authority may issue a licence on terms and conditions deemed appropriate in the circumstances.

13. Reporting and Monitoring

MAL Fisheries Inspectors will ensure compliance with the *Fisheries Act, Aquaculture Regulation*, and terms and conditions of the aquaculture licence through reporting and the conducting of regular inspections and other monitoring activities as appropriate, including spot audits.

Any noted activities of non-compliance will be reported to the Section Head, Licensing Unit.

Note: A pre-operation inspection by a MAL Fisheries Inspector will be required for any new operation.

14. Renewal of Existing Licences

In considering renewal of an existing licence, the licensing authority may apply any or all of the policy as appropriate in the circumstances.

15. Suspension and Revocation

Licences may be suspended or revoked in accordance with section 18 of the *Fisheries Act.*

British Columbia Net Cage Mesh Strength Testing Procedure

VERSION I
March, 2002

Ministry of Agriculture,
Food and Fisheries

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1. SCOPE

This procedure specifies the method that must be used in British Columbia for the purpose of determining the tensile (breaking) strength of mesh used for the containment of farmed fish.

This procedure is intended for use with nets common to the BC finfish aquaculture industry. These nets are generally made with knotless nylon mesh with published breaking strengths of between 50 and 400 lbs. This procedure may not be suitable for other types of nets.

2. PRINCIPLE

A mesh is extended until it ruptures under the applied load. The test is performed using a suitable apparatus that records or indicates the load at the point of rupture. The testing machine is operated at a rate of elongation which is both constant and within prescribed limits.

3. APPARATUS

3.1 Testing Machine

The machine used for testing shall meet the following criteria:

a) Machine shall include a digital load cell or dynamometer providing direct measurement (in units of force) of the load applied to the mesh. The load cell or dynamometer shall be accurate to within 2.5 lbs (11 N), or 1.0% of the mesh breaking strength, whichever is greater.

b) The load cell or dynamometer shall have an accurate means of recording the peak load applied prior to failure of the mesh.

c) Machine shall apply load to a single mesh at a constant rate of elongation equal to 10 inches per minute (25 cm per minute), plus or minus 10%.

d) For testing machines which apply force in discrete steps (such as by way of a hydraulic cylinder with a hand pump), the rate of elongation, per (c) above, shall be the average rate of elongation. During each step, the rate of elongation shall be as close as possible to the average rate required, that is the steps must be consistently applied at a given rate. The maximum mesh elongation for each step shall be 0.20 inches (5 mm). Testing machines of this nature shall be designed such that the user can readily apply the load at a rate that will meet these requirements.

e) The machine shall engage a single mesh for testing with steel pins or hooks formed from round material with a diameter of 0.1875 inches (5 mm) The pins or hooks shall be so mounted as to remain in direct line with the applied load in order to provide a true reading on the load cell or dynamometer. The pins or hooks shall be smooth and free of any sharp edges or roughness.

3.2 Calibration and Maintenance

The dynamometer or load cell from each testing machine shall be calibrated annually in accordance with the manufacturer's recommendations. Testing machines shall also be calibrated annually to ensure that the specified elongation rate is maintained. The owner of the machine shall keep calibration certificates on file, with a copy kept with the machine.

The testing machine shall be properly maintained in order to continue to provide accurate results and to meet the requirements above. This will include replacement of the testing hooks as necessary due to wear, corrosion or roughness.

4. TESTING REQUIREMENTS

4.1 A net cage must be tested according to the testing protocol in Section 5 of this document at the following locations:

(a) two locations separated by greater than 10 meters on the underwater portion of the net; and

(b) one location on the jump net.

4.2 For each location tested on a net cage, the reported result must be the average of 5 breaks.

4.3 Test locations shall be representative of the mesh making up the whole net, and shall not be located in a previously repaired area. If a net has large areas of repair or is fabricated from different sources of mesh, the test procedure (Section 5) shall be performed on each different mesh type or age of mesh, and the reported result must be the average of 5 breaks.

4.4 Testing may be done on mesh remaining in the net or on a sample cut from a net. Cut samples shall be large enough to accommodate the required number of breaks within a single sample.

4.5 Testing done on mesh remaining in the net shall be performed by pulling the net slack around the area to be tested, such that no outside forces are acting upon the mesh being tested, and maintaining such slack for the duration of the test.

4.6 Testing may be performed on dry or wet mesh. Temperature shall be within normal ambient temperatures for the B.C. coast. Tests shall not be conducted on frozen mesh.

***NOTE:** 'Mesh size' refers to the distance between the centers of two opposite joints (or knots) in the same mesh when fully stretched; this information should be obtained from the original tagging on the net cage.

5. TEST PROCEDURE

5.1 Testing shall be performed on a single mesh, oriented so that the pillars (bars) of the mesh are engaged over the pins or hooks, not the knots or joints of the mesh.

5.2 Mount the mesh over the pins or hooks, and take up the slack.

5.3 Apply load at a steady rate of elongation, as defined in 3.1, until the mesh breaks. Record the peak load indicated.

5.4 Repeat for a total of five breaks at the location being tested.

5.5 Average the five results to get the recorded breaking strength for that location.

Example: 200 lbs, 210 lbs, 230 lbs, 195 lbs, 185 lbs

Record breaking strength of (200+210+230+195+185)/5 = 204 lbs

5.6 Record breaking strength to the nearest pound force.

6. REPORTING

Test results shall be recorded on a form that also includes information about the net. Information recorded shall include:

a) Owner of net and net identification number.

b) Mesh manufacturer and manufacturer's published mesh-breaking strength.

c) Net fabricator and date of net fabrication.

d) Accumulated in-water service time.

e) Size and gauge of mesh and dimensions of net cage.

f) Date and location of testing, company and name of person doing test.

g) Information on antifoulant treatment of net, if any.

h) Whether net was tested wet or dry.

i) Approximate ambient temperature at test.

j) Breaking strength test results for each prescribed location, and pass/fail grades per requirements of the Aquaculture Regulation, Appendix 2, section 12.

i) General comments and notes on overall condition of net.

j) Signature of tester.

7. ADDITIONAL INFORMATION

For more information or a printed copy of this document, please call the Courtenay office of the Ministry of Agriculture, Food and Fisheries at (250) 897-7540.

An electronic version of this document is available on the Government of British Columbia web site: www.gov.bc.ca/agf

8. EXAMPLE REPORTING FORM

NET CAGE TESTING RECORD

Date of Testing:	**Net ID:**	**Job Order No.:**
Owner of Net (Company):	Name of Company performing testing:	
Name of Contact:	Location of Testing:	Name of Tester:

Mesh Manufacturer:	Dimensions: (ft) or (m)? _____x_____x _____deep:
Net Fabricator:	Mesh Size (mid knot to mid knot): (in) (mm)
Date of Net Fabrication: / Accumulated in-water service time:	Gauge: 210/
Mesh Manufacturer Breaking Strength (lbs):	Tested: WET or DRY ?
Required Strength (lbs or kg ?) BELOW WATERLINE: JUMP:	Test temperature (approx.):

Breaking Strength (lbs or Kg ?)

	Dipped?	Test 1	Test 2	Test 3	Test 4	Test 5	Average	Pass/ Fail	Initials of Tester
BELOW WATERLINE 1	Yes □ No □								
BELOW WATERLINE 2	Yes □ No □								
JUMPNET	Yes □ No □								

Details of Complete Visual Inspection:

Repairs Completed:

Comments:

Signature of Tester:

B.C. Reg. 78/2002
O.C. 283/2002

Deposited April 19, 2002

Fisheries Act

AQUACULTURE REGULATION

Contents

Interpretation

1 In this regulation:

"Act" means the *Fisheries Act*;

"aquaculture licence" means a licence referred to in section 13 (5) of the Act;

"aquaculture facility" means an establishment where the business of aquaculture is carried on;

"attachment structure"
means mollusc shell, rope, netting, tubing or other structures provided as substrate for the attachment of aquatic plants and fish for purposes of aquaculture;

"bag cage" means an enclosure in a marine or lake environment

(a) made of material impermeable to water, and

(b) used to contain fish;

"cage support system"
means a floating infrastructure and anchoring system that supports net cages, bag cages and ancillary equipment;

"containment structure"
means cage support systems, net cages, bag cages, tanks, troughs, raceways, natural or man made ponds, trays or other structures used to contain aquatic plants or fish for purposes of aquaculture;

"drug" means a drug as defined in the *Pharmacists, Pharmacy Operations and Drug Scheduling Act* or the *Food and Drugs Act* (Canada);

"finfish" means fish of the classes Agnatha, Chondrichthyes or Osteichthyes grown by a holder;

"holder" means the person to whom an aquaculture licence is issued;

"manager" means the manager of aquaculture in the minister's ministry;

"net cage" means net enclosures used to contain fish.

Dealing in fish or aquatic plants

2
(1) A person must not possess, buy, sell, introduce into British Columbia or transplant within British Columbia fish or aquatic plants for the purpose of carrying on the business of aquaculture unless the person is a holder or is acting on behalf of a holder.

(2) Subsection (1) does not prevent a person who has taken the fish or aquatic plants as collateral for a loan from seizing or disposing of the fish or aquatic plants or otherwise realizing on the person's interest in the fish or aquatic plants to satisfy the obligations secured by them.

Release and escape

3
(1) A person must not release aquatic plants or fish, or cause, authorize or allow the release of aquatic plants or fish, to fresh or tidal waters from an aquaculture facility or from a containment structure or an attachment structure in an aquaculture facility unless authorized to do this by an aquaculture licence.

(2) A holder must take reasonable precautions to prevent the escape of aquatic plants and fish from the holder's aquaculture facility and from a containment structure or an attachment structure in the aquaculture facility.

(3) A holder must take all reasonable measures to control, mitigate, remedy and confine the effects of an escape or a suspected escape of aquatic plants or fish from the holder's aquaculture facility.

(4) Reasonable precautions and reasonable measures under subsection (2) and (3) in the case of a marine finfish aquaculture facility must include compliance with the standards of practice in Appendix 2 of this regulation.

Reporting escape

4
(1) The holder, or a person acting on behalf of the holder, who discovers an escape or evidence suggesting an escape of finfish from an attachment structure or a containment structure in the holder's aquaculture facility must report the escape or evidence to the manager

(a) verbally, within 24 hours of the discovery, and

(b) in writing, within one week of the discovery.

(2) A written report under subsection (1) (b) must include:

(a) the date, estimated time and location of the escape or suspected escape,

(b) the species of finfish that escaped or may have escaped,

(c) the estimated number of finfish that escaped or may have escaped,

(d) the cause or suspected cause of the escape or suspected escape,

(e) the calendar year in which the finfish were stocked at the aquaculture facility,

(f) the average weight of the finfish that escaped or may have escaped,

(g) the rearing facility from which the finfish were received by the aquaculture facility, and

(h) a record of each drug administered to the finfish including:

(i) the name of the drug,

(ii) the period of administration, including the dates of commencement and completion of the drug treatment,

(iii) the name of the prescribing veterinarian,

(iv) the prescribed withdrawal period, and

(v) identification of the lots of finfish treated.

(3) A holder who recaptures or attempts to recapture finfish that have escaped from an aquaculture facility must report in writing the results of the recapture or attempt to recapture to the manager within one week of the recapture or attempted recapture.

Inventory records

5
(1) For each finfish aquaculture facility of a holder, the holder must maintain accurate written records of the following for each containment structure in the aquaculture facility:

(a) the transport, transfer and introduction of finfish into or away from the aquaculture facility;

(b) the weekly finfish mortalities, including the causes of the mortalities and the numbers attributable to each cause of mortality;

(c) all finfish sales from the aquaculture facility, including the number and destination of the finfish sold;

(d) the source and number of each group, lot or stock of finfish at the aquaculture facility; and

(e) each escape of finfish from the aquaculture facility.

(2) Holders must maintain a copy of the records required under this section at the finfish aquaculture facility for each lot of finfish until that lot of finfish is harvested or removed from the aquaculture facility.

Inspection and maintenance records

6
(1) For each finfish aquaculture facility of a holder, the holder must maintain accurate written records of the details of all inspections, maintenance and evaluation of all fish handling equipment, cage support systems and containment structures,

including net cages and bag cages.

(2) Records of inspection, monitoring, evaluation and maintenance under this section in the case of a marine finfish aquaculture facility must be kept in a manner that complies with the requirements contained in the standards of practice in Appendix 2 of this regulation.

Training

7
(1) Holders must ensure that all finfish aquaculture facility staff are trained to conduct the business of aquaculture in a manner that prevents escapes and, if escapes occur, enables them to detect escapes and respond immediately and appropriately.

(2) In the case of a marine finfish aquaculture facility, training under this section must be conducted in a manner that complies with the requirements contained in the standards of practice in Appendix 2 of this regulation.

Record of drugs

8 (1) A holder must keep a record of a drug administered to the holder's finfish.

(2) For the purposes of this regulation the administration of a drug to a finfish includes the intentional introduction of a drug, or a substance containing a drug, into water in the holder's aquaculture facility.

(3) The record referred to in subsection (1) must include the following information:

(a) the aquaculture licence number and name of the holder;

(b) the location of the aquaculture facility;

(c) the species of finfish cultured and held;

(d) the name of the veterinarian who prescribed any drugs;

(e) a log

(i) naming the drugs,

(ii) specifying how the drugs were administered,

(iii) specifying the treatment schedule including the date treatment commenced,

(iv) specifying the date of the last treatment, and

(v) specifying the name and including the signature of the person responsible for administering each treatment.

(4) If a person delivers finfish from an aquaculture facility to a processing plant or to a fish buying station, the person must provide, at the time of delivery, a statement to the fish processing plant licensee or the fish buying station licensee, as the case may be, and the holder must retain a copy of this statement for one year.

(5) If a person delivers finfish from a fish buying station to a fish processing plant the person must provide, at the time of the delivery, the original or a copy of the statement referred to in subsection (4) to the fish processing plant licensee.

(6) A fish processing plant licensee who has received a statement under subsection (4) or (5) must retain a copy of the statement for one year.

(7) The statement referred to in subsection (4) must be signed by the person responsible for administering the treatment and by the holder or the holder's agent and must include the following information:

(a) the aquaculture licence number;

(b) the species of finfish;

(c) the date of harvest;

(d) the name of the fish processing plant to which the finfish are delivered;

(e) the quantity of finfish harvested;

(f) a lot number that identifies the shipment of finfish;

(g) the date of the most recent treatment, if any, with a drug or the final day of the withdrawal period for an administered drug, whichever is latest, including:

(i) the name of the drug,

(ii) the treatment schedule,

(iii) the dates treatment commenced and finished,

(iv) the prescribed withdrawal period,

(v) the name of the veterinarian, if any, who prescribed the drug, and

(vi) the name of the person responsible for administering the treatment.

Drug free period

9 A holder must not harvest finfish after administering a drug to the finfish unless:

(a) the *Food and Drugs Act*
(Canada) or regulations made under that Act provide standards governing the use of the drug and the holder has complied with those standards, or

(b) the drug is prescribed by a veterinarian, the veterinarian has prescribed a mandatory period of time that must pass between the administration of the drug and the harvest of finfish and the holder has complied with all the veterinarian's instructions.

Prohibition against processing

10
(1) A person must not process finfish for sale in British Columbia except at an establishment that has a valid certificate of registration issued by the Department of Fisheries and Oceans (Canada).

(2) Subsection (1) does not apply to the packaging of finfish by a retailer for sale by the retailer.

(3) Subsection (1) does not apply if a person has the written consent of the minister to process finfish at an establishment with a valid processing licence.

Transportation

11
(1) A person who transports aquatic plants or fish on, over or through fresh or tidal waters must take reasonable precautions to prevent the escape of the plants or fish.

(2) A person who transports finfish must take all reasonable measures to control, mitigate, remedy or confine the effects of an escape of finfish.

Inspectors

12 (1) The minister may appoint a person as an aquaculture inspector to investigate matters related to

(a) the conduct of the business of aquaculture, and

(b) compliance with the Act, this regulation and an aquaculture licence and its conditions.

(2) An aquaculture inspector may enter an aquaculture facility during normal business hours to investigate the matters referred to in subsection (1) and a person must not obstruct the inspector in the course of the inspector's duties.

(3) At the request of an aquaculture inspector, an inspector of fisheries or a conservation officer, a holder or a person acting on a holder's behalf must produce for inspection any record or best management practice plan that is required to be kept under this regulation or as a term of an aquaculture licence, and

(a) a holder or person acting on behalf of a holder must produce for inspection any record or best management practice plan required to be kept under this regulation or a term of an aquaculture licence within 48 hours of a request by an aquaculture inspector, an inspector of fisheries or a conservation officer, and

(b) despite paragraph (a), a holder or a person acting on behalf of a holder must immediately produce for inspection any records or best management practice plan required to be kept at a finfish aquaculture facility by this regulation on request of an aquaculture inspector, an inspector of fisheries or a conservation officer who is present at the aquaculture facility.

(4) In the case of a marine finfish aquaculture facility, records or best management practice plans referred to in this section must include the records or best management practice plans required to be kept under Appendix 2 of this regulation.

(5) To establish that a net cage's mesh meets the minimum breaking strengths established in section 14 of Appendix 2, an aquaculture inspector, an inspector of fisheries or a conservation officer may apply one of the following procedures:

(a) review of the record of the most recent complete out-of-water servicing and inspection completed in accordance with section 18 of Appendix 2;

(b) require the holder to conduct an on-site test of the net in accordance with the protocol in section 15 of Appendix 2 while the net cage remains in the water at the marine finfish aquaculture facility;

(c) require the holder to remove the net cage from the water for a complete out-of-water servicing and inspection completed in accordance with section 18 of Appendix 2 within a timeframe established by the aquaculture inspector, the inspector of fisheries or the conservation officer.

Fees

13
A person applying for a new aquaculture licence, a renewal of an aquaculture licence or an amendment of an aquaculture licence must pay the fee for this set out in Appendix 1.

Appendix 1

1 In this Appendix:

"primary aquaculture product"
means an aquatic plant or fish that is a product of aquaculture but does not include a processed or manufactured product;

"production value"

means the dollar value of sales of a primary aquaculture product in the previous licence year, but, if the terms and conditions of the aquaculture licence for the previous licence year contain a maximum volume of production equivalent to a dollar value, it means that dollar value for that maximum volume of production.

2 The following schedule of fees applies for the purposes of section 13 of this regulation.

Schedule of Fees

(a) Application for initial licence..... $25

(b) Licence amendment..... $50

(c) Licence and licence renewal for

(i) aquaculture facility on private land, production value at least $7 500..... $100

(ii) aquaculture facility on private land, production value less than $7 500..... $50

(iii) aquaculture facility on Crown land, production value at least $7 500

(A) aquatic plants and fish other than finfish..... $50

(B) finfish..... $200

(iv) aquaculture facility on Crown land, production value less than $7 500

(A) aquatic plants and fish other than finfish..... $50

(B) finfish..... $100

Appendix 2

Standards of Practice for Marine Finfish Aquaculture Escape Prevention and Response

1 In this Appendix, **"spotter"** means a person trained and employed

(a) to watch for activity that indicates an increased risk of finfish escaping,

(b) to signal in a clear and predetermined manner for the activity to stop, and

(c) to take appropriate measures to stop the activity.

Part I — Equipment Design, Use and Maintenance

A — General Design and Maintenance

2
All equipment, materials and structures employed at a marine finfish aquaculture facility must be designed, constructed, installed, inspected and maintained in a manner that prevents escapes, including escapes caused by damage, holes or tears to net cages or containment structures through entanglements with other equipment.

3
Holders must monitor, evaluate and maintain containment structures, including cage support systems and net cages, in order to prevent escapes and to detect and respond to any escapes in a timely manner.

B — Containment Structures and Cage Support Systems

4 The requirements for containment structures are as follows:

(a) holders must ensure that equipment used at their marine finfish aquaculture facility is designed and constructed to meet generally accepted standards prevalent in the aquaculture industry;

(b) holders must evaluate new or experimental containment structure system designs through:

(i) field trials,

(ii) consultation with other aquaculture producers who have used the design,

(iii) comprehensive analysis of the manufacturer's performance trials, or

(iv) review by a professional engineer,

to ensure compatibility with conditions at the proposed location of the marine finfish aquaculture facility and with containment requirements;

(c) holders must ensure that containment structures are installed by a person who knows the risks of finfish escapement from the containment structures and the measures needed to minimize these risks;

(d) containment structures must be repaired or replaced with materials that meet or exceed the specifications approved in the holder's aquaculture licence.

5 The requirements for cage support systems are as follows:

(a) all cage support system weights and other equipment must be designed, constructed and installed with the aim of preventing entanglement and chafing with containment nets, predator nets and shark guard nets;

(b) all cage support system weights, anchoring equipment, and other equipment that has the potential to come into physical contact with the net cage must be maintained to prevent catching or abrading nets;

(c) daily above-water visual inspections of active cage support systems including, anchoring-line buoy orientation and the general integrity of the anchoring system must be conducted at all marine finfish aquaculture facilities;

(d) any irregularity noted in paragraph (c) that increases the risk of escape must be corrected or repaired immediately;

(e) a record of the daily visual inspection and any repairs under this section must be made and a copy of the record must be retained at the marine finfish aquaculture facility for one year.

6 The requirements for anchoring equipment are as follows:

(a) anchoring equipment design must be compatible with the containment structure equipment and biophysical conditions of the location;

(b) anchoring equipment must be repaired or replaced with materials that meet or exceed specifications approved in the holder's aquaculture licence.

C — Net Cages

I — Design, Installation and Maintenance

7
A net cage that does not have a permanently attached mesh top must be attached by the water line rope of the net cage to the cage support system as a primary point of attachment and any attachment of net cages to the cage support system railing must be only for support of the jump net.

8

Jump nets extending at least one metre above the surface of the water must be installed at the top of any net cage that does not have a permanently attached mesh top or similar barrier.

9 Sufficient weight or pressure must be used to produce tension on net cage panels with the aim of maintaining a taut net.

10 Net cages must be weighted at a sufficient number of points to ensure the tension or weight is distributed evenly.

11 Netting mesh size must be small enough to contain the smallest fish to be placed in the net cage.

12 Net cages must be stored in a manner that minimizes deterioration of the net material.

13
Holders must ensure that all tears found while handling or inspecting net cages in use or intended for use at any time are repaired immediately.

II — Net Cage Mesh Strength

14
According to the dimension classification identified in Table 1, the mesh of any part of a net cage, including any repairs, must meet the minimum breaking strength standards established in Tables 2 through 6.

Table 1: Net Cage Dimension Classification

Perimeter	Up to 50 m (164 ft.)	> 50 m to 60 m (197 ft.)	> 60 m to 70 m (230 ft.)	> 70 m to 80 m (262 ft.)	> 80 m to 90 m (295 ft.)	> 90 m to 110 m (361 ft.)	> 110 m
Depth							
Up to 5 m (16 ft.)	A	A	B	C	D	D	E
>5 m to 10 m (33 ft.)	A	A	B	C	D	D	E
>10 m to 15 m (49 ft.)	A	B	B	C	D	D	E
>15 m to 20 m (66 ft.)	B	B	C	D	D	D	E
>20 m to 30 m (98 ft.)	D	D	D	D	D	E	E
>30 m	E	E	E	E	E	E	E

A to E establishes net cage dimension classification. Depth is from waterline rope to net cage bottom. Perimeter refers to the line bounding the top of the net cage.

Table 2: Dimension Classification A

Mesh Size	Minimum Required Mesh Breaking Strength (below surface of water)	Minimum Required Mesh Breaking Strength (jump netting, above surface of water)
< 22 mm (7/8")	20 kg (44 lbs)	18 kg (41 lbs)
> 22 mm (7/8") to < 38 mm (1-1/2")	26 kg (58 lbs)	24 kg (52 lbs)
38 mm (1-1/2")	31 kg (68 lbs)	28 kg (62 lbs)
> 38 mm (1-1/2")	41 kg (90 lbs)	38 kg (83 lbs)

Table 3: Dimension Classification B

Mesh Size	Minimum Required Mesh Breaking Strength (below surface of water)	Minimum Required Mesh Breaking Strength (jump netting, above surface of water)
< 22 mm (7/8")	25 kg (56 lbs)	24 kg (52 lbs)
> 22 mm (7/8") to < 38 mm (1-1/2")	31 kg (68 lbs)	28 kg (62 lbs)
38 mm (1-1/2")	41 kg (90 lbs)	38 kg (83 lbs)
> 38 mm (1-1/2")	46 kg (102 lbs)	43 kg (94 lbs)

Table 4: Dimension Classification C

Mesh Size	Minimum Required Mesh Breaking Strength (below surface of water)	Minimum Required Mesh Breaking Strength (jump netting, above surface of water)
< 38 mm (1-1/2")	36 kg (79 lbs)	33 kg (73 lbs)
38 mm (1-1/2")	46 kg (102 lbs)	43 kg (94 lbs)
> 38 mm (1-1/2")	51 kg (113 lbs)	47 kg (104 lbs)

Table 5: Dimension Classification D

Mesh Size	Minimum Required Mesh Breaking Strength (below surface of water)	Minimum Required Mesh Breaking Strength (jump netting, above surface of water)
< 38 mm (1-1/2")	41 kg (90 lbs)	38 kg (83 lbs)
38 mm (1-1/2")	51 kg (113 lbs)	47 kg (104 lbs)
> 38 mm (1-1/2")	62 kg (136 lbs)	57 kg (125 lbs)

Table 6: Dimension Class E

Mesh Size	Minimum Required Mesh Breaking Strength (below surface of water)	Minimum Required Mesh Breaking Strength (jump netting, above surface of water)
< 38 mm (1-1/2")	46 kg (102 lbs)	43 kg (94 lbs)
38 mm (1-1/2")	62 kg (136 lbs)	57 kg (125 lbs)
> 38 mm (1-1/2")	77 kg (169 lbs)	71 kg (156 lbs)

15
Tests to determine the net cage mesh breaking strengths of a net cage's mesh as established in section 14 of this Appendix must be conducted in accordance with the protocol set out in the British Columbia Net Cage Mesh Strength Testing Procedure, Version 1, a copy of which may be obtained from the manager or an aquaculture inspector.

16
At the request of an aquaculture inspector, an inspector of fisheries or a conservation officer, holders must demonstrate that net cage mesh meets minimum breaking strengths established in section 14 of this Appendix, within a period of time determined by the inspector or conservation officer.

17
Net cages with mesh that does not pass the breaking strength test requirements established in section 14 of this Appendix must

be repaired or retired as soon as possible.

III — Inspections and Record Keeping

18 The requirements for complete out-of-water servicing and inspection of net cages are as follows:

(a) servicing and inspections must be carried out by a person who knows the risks of finfish escapement from the net cages and the measures needed to minimize these risks;

(b) a complete visual inspection of the entire net cage must be completed for signs of abrasions, tears or holes;

(c) any damage to the net cage must be repaired as needed;

(d) the net cage mesh must be tested in accordance with the protocol in section 15 of this Appendix;

(e) a record of testing must be completed in accordance with the protocol in section 15 of this Appendix;

(f) the record of testing must be signed by the person who carried out the inspection.

19 (1) In this section, **"comparable method"**
means a method of inspection designated in writing by the manager to be equivalent to inspection by divers for purposes of this section.

(2) Holders must ensure that complete inspection and repair of active net cages and any similar structure that contains fish at their marine finfish aquaculture facilities takes place as follows:

(a) an underwater inspection, by divers or other comparable method must be conducted on any net cages or any similar structure used to contain fish prior to the initial introduction of a new group of fish;

(b) active net cages and similar structures used to contain fish must be inspected every 60 days by divers or another comparable method;

(c) despite paragraph (b), active net cages and any similar structure used to contain fish must be inspected as soon as is practicable by divers or another comparable method after any operational activity or event that increases risk of net failure, including extreme environmental conditions, net cage changes, fish delivery, recurring predator attacks, vandalism to net cages or equipment or towing of active containment structures;

(d) despite paragraph (b), active net cages and any similar structure used to contain fish must be inspected by divers or another comparable method as soon as is practicable after any event that occurs during routine harvesting, grading or any other routine activity which leads a holder or person acting on their behalf to suspect there is a material increase in the risk of net failure.

20
Each net cage must be marked with an inventory control number that is permanently marked on a permanent tag attached at the top of the net cage within one metre of a corner down line or a main down line of a circular net cage.

21
At the marine finfish aquaculture facility where the net cage is deployed, holders must have a written maintenance record for each net cage that includes

(a) the inventory control number referred to in section 20 of this Appendix,

(b) the dimensions,

(c) the mesh size,

(d) a record of the most recent complete out-of-water servicing and inspection under section 18 of this Appendix,

(e) the accumulated time-in-water since the most recent complete out-of-water servicing and inspection under section 18 of this Appendix,

(f) a description and the dates of each inspection under section 19 of this Appendix since most recent complete out-of water servicing and inspection under section 18 of this Appendix, and

(g) a description and the dates of all repairs, including reasons for repairs, made to the net cage since the most recent complete out-of-water servicing and inspection under section 18 of this Appendix.

22
Records required to be kept under section 19 and 21 of this Appendix that were recorded prior to the last out-of-water servicing and inspection under section 18 of this Appendix must be retained for six months after that out-of-water servicing and inspection.

23 Holders must have written records for each net cage that includes

(a) the inventory control number in section 20 of this Appendix,

(b) the manufacturer's name,

(c) the year produced,

(d) the dates and records of all complete out-of-water servicings and inspections since October 31, 2000, under section 18 of this Appendix, and

(e) if applicable, the date of retirement.

24 Records for each net cage under section 23 of this Appendix must be retained for 1 year following retirement of the net cage.

Part II — Operations

A — Boat Operations

25
Holders must ensure that all boats in use at their marine finfish aquaculture facilities are operated so as to prevent damage to containment structures and anchoring systems.

26 Holders must designate a docking site for boats not involved in the cultivation of fish.

27
Holders must ensure that signs are posted on the containment system to direct boats not involved in the cultivation of fish to designated docking sites.

28 Designated boat docking sites must be designed and located to prevent propeller damage to net cages.

29 Large vessels must not be moored to cage support system rails or stanchions.

B — Key Operational Activities

30
Equipment and practices related to boat operations, fish feeding, fish handling, mortality recovery, smolt delivery, grading, harvesting, towing of active net pens and other activities must be designed and conducted in a manner that prevents the escape of fish.

31
Spotters must be used to visually monitor and prevent damage to net cages, ropes and cage support systems during all fish handling activities, including when a large vessel is operating in the vicinity of active net cages.

32
Catch nets must be used to prevent escapes due to human error, equipment failure, or fish jumping out of the equipment while holders are transporting, harvesting, grading, sampling and moving live finfish outside of net cages.

33
If a pattern of predator attacks is established and resulting mortalities are experienced at a marine finfish aquaculture facility, holders must initiate measures to prevent containment structure damage and collateral stock escape.

C — Best Management Practices Plan

34
(1) Holders must develop and follow a best management practices plan for the operation and maintenance of their marine finfish aquaculture facilities, within 180 days of the proclamation of this regulation, which is consistent with the Standards of Practice in Appendix 2 of this regulation and with the objective of preventing escapes of finfish to the environment as a result of the following activities:

(a) finfish delivery, handling, grading and harvesting;

(b) net cage and bag cage changing;

(c) boat operations and maintenance;

(d) towing of active containment structures at, to or from the marine finfish aquaculture facility;

(e) management of predation of farm stock;

(f) recovery of mortalities.

(2) The best management practices plan must include

(a) a description of specific management practices and standard operating procedures used to achieve the above objectives,

(b) a statement that the best management practices plan has been reviewed and endorsed by the holder, and

(c) a statement that individuals responsible for implementation of the plan understand and have received training in the plan.

(3) Holders must:

(a) maintain a copy of the best management practices plan at the marine finfish aquaculture facility and make the plan available upon the request of the manager of aquaculture, an aquaculture inspector, an inspector of fisheries or a conservation officer,

(b) amend the best management practices plan in a timely fashion whenever there is a change in the operation of the marine finfish aquaculture facility that materially increases the risk of escape of finfish to the environment,

(c) review any changes in the operation of the marine finfish aquaculture facility and ensure that changes are consistent with best management practices plan objectives, and

(d) if the manager provides a written opinion that a best management practices plan is ineffective in achieving the objectives in subsection (1), revise the best management practices plan and incorporate those revisions as needed in a timely fashion, to ensure the objectives are met.

Part III — Escape Response Plans

35 Every holder must have a written escape response plan.

36

Holders must ensure that their escape response plans are posted in visible locations at their marine finfish aquaculture facilities and that the locations and contents of the posted plans are made known to all staff.

37
Holders' escape response plans must include step-by-step procedures for preventing further escapes and for reporting escapes.

38
After an escape or suspected escape, holders must ensure that immediate corrective action is taken to prevent further escapes and the escape response plan is fully executed.

39
On the escape of finfish from an aquaculture facility, the holder must take all reasonable measures consistent with federal, British Columbia and local government enactments that

(a) will result in the recapture of a significant portion of the lost stock, and

(b) will not detrimentally impact on wild stocks.

40
Holders must ensure that their escape response plans include arrangements in place with federal, British Columbia and local government authorities to obtain without delay the approvals necessary for the purposes of section 39 of this Appendix.

Note: this regulation replaces B.C. Reg. 364/89

[Provisions of the *Fisheries Act*, R.S.B.C. 1996, c. 149, relevant to the enactment of this regulation: section 26]

MINISTRY OF AGRICULTURE AND LANDS
FINFISH AQUACULTURE SITE INSPECTION CHECKLIST

1. OPERATION DESCRIPTION

Incident Number: _____

Company Name: _____ Location: _____

Site Name: _____ Aquaculture Licence Number: _____

Inspection Date and Time: _____

Person(s) Interviewed: _____

Inspection Completed by: _____

GPS Coordinates:

# 1-Lat:		# 2-Lat:		# 3-Lat:		# 4-Lat:	
# 1-Long:		# 2-Long:		# 3-Long:		# 4-Long:	

(Note: As more than one set of coordinates may be required, an additional page one will need to be completed if the site has more than one block of pens within their tenure area.)

2.1 TERMS AND CONDITIONS

MANAGEMENT PLAN		OBSERVED ON SITE		
Species	**Biomass - MT (Total Max. Production Per Cycle)**	**Species**	**Piece Count**	**Biomass - MT**
Total				

Pending Amendments:

Are there any outstanding amendment applications for this site residing with the Licensing Unit? YES ☐ NO ☐

If yes, when did the Licensing Unit receive the amendment for decision? _____

If yes, what are the proposed or requested changes? _____

Biomass (MT) Stocked: _____ **Biomass (MT) moved off site:** _____

Projected Harvest Date: _____

Projected Size at Harvest: _____

Projected Number at Harvest: _____

Comments: _____

**** Information collection only at this point.***

Containment Structures

MANAGEMENT PLAN			OBSERVED ON SITE			
Size	**Number**	**Surface (m2)**	**Size (m)**	**Total Number**	**Number in Use**	**Surface Area (m2)**
Total:						

2.2. AQUACULTURE LICENCE

Is the Aquaculture Licence current? **s. 13 of FA, s. 2 of Aquaculture Reg.**

(Note: It is not a requirement to have the licence on site.) YES ☐ NO ☐

Is the company in compliance with any attached special provisos? YES ☐ NO ☐ N/A ☐

If no provide details:

_____

_

_____

_

3. ESCAPE REPORTS

- Since the last inspection or during the last 12 months, has the farm detected any escapes? YES ☐ NO ☐
- If response is yes, was the escape reported to the Manager of Aquaculture? **s. 4(1)** YES ☐ NO ☐
- Identify case file number or provide details of most recent escape event (date, species, number, cause, year stocked, average weight, rearing facility, record of each drug; case file number): **s. 4(2)**

4. INVENTORY AND INSPECTION RECORDS

4. A STOCK INVENTORY RECORDS

- Are stock inventory records kept for each containment structure in the facility? **s. 5(1)** YES ☐ NO ☐
- Are these inventory records complete? **s.5(1)** YES ☐ NO ☐

If no, cite the specific deficiency:

- ☐ Fish in – fish out
- ☐ Weekly mortalities recorded
- ☐ Causes of mortalities
- ☐ Numbers attributed to each cause
- ☐ Number attributed to Escapes
- ☐ Source, number and lot of finfish
- ☐ Other (specify)

_____

_____

- Are the above inventory records kept on site? **s. 5(2)** YES ☐ NO ☐

4. B. DAILY ABOVE WATER INSPECTIONS

- Are daily above-water visual inspections of cage support systems done? **s.A5(c)** YES ☐ NO ☐
- Are these daily visual inspections recorded in a written manner? **s.A5(e)** YES ☐ NO ☐
- Are these daily records kept on site? **s.A5(e)** YES ☐ NO ☐

4. C. UNDERWATER INSPECTIONS OF ACTIVE NET CAGES

- Are all required underwater inspections completed by divers or other approved comparable methods? (Note that approval for comparable methods must be pre-approved in writing by the manager) **s.A19(1)** YES ☐ NO ☐

  Detail method(s) of underwater inspections: Diver ☐ , or describe other method_____

- Are underwater inspections, by divers or other approved methods, conducted on new net cages prior to the initial introduction of new fish? **s.A19(2)(a)** YES ☐ NO ☐
- Are active net cages inspected every 60 days by divers or other approved methods? **s. A19(2)(b)** YES ☐ NO ☐
- Are active net cages inspected by divers, or approved methods, after any operational activity or event that increases the risk of escapes, such as extreme weather, net changes, fish delivery, predator attacks, vandalism, towing of active net pens and other activities? **s.A19(2)(c)** YES ☐ NO ☐
- If during a harvest, grading or other routine activity an event occurs that causes the holder to suspect there may be an increase in the risk of net failure, are the net cages inspected by divers or other approved methods? **s.A19(2)(d)** YES ☐ NO ☐

4. D. REQUIRED NET CAGE MAINTENANCE RECORDS

- Are net cage maintenance records kept for each cage? **s.A21** YES ☐ NO ☐
- Do the records kept have all the required elements? **s.A21** YES ☐ NO ☐

If no, cite deficiency **s.A21**(a-g)

a – ☐ inventory control number per **s.A20**
b – ☐ dimensions
c – ☐ mesh size
e – ☐ accumulated time in water since last servicing and inspection
f – ☐ description and dates of each inspection under **s.A19(2)**
g – ☐ description and dates of all repairs including reasons for repairs since last out of water servicing/inspection

- Are these records kept on site? YES ☐ NO ☐
- Where a containment net has had an out of water testing and servicing performed, is the most recent record of results for these tests on site? **s.A21(d)** YES ☐ NO ☐ N/A ☐
- Is the record noted above complete? **s.A18 (e)** If no, note the deficiency. YES ☐ NO ☐ N/A ☐

_____

(Inspector should refer to section 6 and 8 of BCNTP manual.)

- Was there a circumstance when Inspectors conducted net tests on site or required a net to be removed for a complete out of water servicing? **s.12(5)(b) and s.12(5)(c).** YES ☐ NO ☐

IF YES, NOTE CASE FILE NUMBER: _____

5. BEST MANAGEMENT PRACTICES PLAN (BMP)

- Has the company developed a BMP? **s.A34(1)** YES ☐ NO ☐
- Is the BMP on site? **s.A34(3)(a)** YES ☐ NO ☐
- Does the BMP include a description of specific management practices and Standard Operating Procedures on all required elements? (noted below) **s.A34(2)(a)** YES ☐ NO ☐

  If no, cite deficiency:
  - ☐ finfish delivery, handling, grading and harvesting
  - ☐ net cage and bag cage changing
  - ☐ boat operations and maintenance
  - ☐ towing of active containment structures at, to or from the site
  - ☐ management of predation of farm stock
  - ☐ recovery of mortalities
- Does the BMP include a statement that the BMP has been reviewed and endorsed by the holder? **s.A34(2)(b)** YES ☐ NO ☐
- Does the BMP include a statement that individuals responsible for implementing the plan understand and have received training in the plan? **s.A34(2)(c)** YES ☐ NO ☐

Comments, if any: _____

_____

6. ESCAPE RESPONSE

- Does the holder have a written escape response plan? **s.A35** YES ☐ NO ☐
- Is the escape response plan posted in a visible location? **s.A36** YES ☐ NO ☐
- Is the location and content of the plan known by all staff? **s.A36** YES ☐ NO ☐
- Does the escape response plan include step-by-step procedures for **preventing further escapes** ? **s.A37** YES ☐ NO ☐
- Does the escape response plan include step-by-step procedures for **reporting** escapes? **s.A37** YES ☐ NO ☐
- Does the escape response plan include necessary arrangements with federal, BC and local government authorities to obtain necessary approvals to recapture stock? **s.A40** YES ☐ NO ☐ N/A ☐

7. THERAPEUTANT USE AND RECORDS

NOTE: IT IS NOT A REQUIREMENT THAT ANY OF THE RECORDS NOTED IN THIS SECTION BE MAINTAINED ON SITE – AT THE REQUEST OF AN INSPECTOR, THESE RECORDS MUST BE PRODUCED WITHIN 48 HOURS s.12(3)(a)

- Are drug administration records kept and are they complete? **s.8(1)** YES ☐ NO ☐ N/A ☐

If not complete, cite deficiency **s. 8(3)**

- ☐ aquaculture licence number and name of holder
- ☐ location of the facility
- ☐ species of fish cultured and held
- ☐ name of the veterinarian who prescribed drugs
- ☐ a log that: names the drugs; specifies how drugs were administered; specifies treatment specifies date of last treatment; and includes name and sign responsible to administer treatment.

Note missing element(s) from log: _____

- For current or last treatment, record the following information **s.8(7)(g)**

  Date of treatment: _____

  Prescribed withdrawal period: _____

  Name of the veterinarian who prescribed drug: _____

- If fish are or have been harvested, has the holder provided a detailed statement to the processor that includes the required drug administration information? **s.8(4)** (requires the holder to maintain a copy) YES ☐ NO ☐ N/A ☐
- Does this above statement s.8(4) contain the required information? **s.8(7)** YES ☐ NO ☐ N/A ☐

  If no, note the area of deficiency:
  - ☐ Aqua licence number
  - ☐ Species
  - ☐ Date of harvest
  - ☐ Name of processor
  - ☐ Quantity of fish
  - ☐ Lot number
  - ☐ Date of the most recent treatment with a drug or final day of the withdrawal period including, name of drug, treatment schedule, dates treatment commenced and finished, prescribed withdrawal period, vet name and person responsible for administering.

If not – state the precise nature of the deficiency _____

8. NET CAGE INSPECTIONS

- Are all net cages permanently marked with an inventory control number? **s. A20** YES ☐ NO ☐

  Perform Net Audit:
  Record inventory control number from deployed net. _____

  Can the operator provide complete and required records for this net? YES ☐ NO ☐
  If no – detail the deficiency. _____

- Is the water line rope the primary point of attachment of the net cage to the cage support system (for cages without a permanently attached mesh top)? **s. A7** YES ☐ NO ☐
- Does the jump net extend at least 1 metre above the water line (for cages without a permanently attached mesh top)? **s. A8** YES ☐ NO ☐
- Is sufficient weight or pressure used to produce tension on net panels in order to maintain a taut net? **s. A9** YES ☐ NO ☐
- Are net cages weighted at a sufficient number of points to ensure the tension or weight is distributed evenly? **s. A10** YES ☐ NO ☐
- Is mesh size small enough to contain the smallest fish? **s.A11** YES ☐ NO ☐

- Where nets are being stored on site – are they stored in a manner to minimize deterioration (ex., protected from UV)? **s.A12** YES ☐ NO ☐ N/A ☐
- Are all tears found on active net cages repaired immediately? **s.A13** YES ☐ NO ☐
- Are irregularities in the cage supporting system that might increase the risk of escape corrected or repaired immediately? **s.A5(d)** YES ☐ NO ☐

If no – note the deficiency _____

9. BOAT DOCKING

- Is there a designated docking site for boats not involved in fish cultivation? **s. A26** YES ☐ NO ☐
- Are these sites designed and located to prevent propeller damage to net cages? **s. A28** YES ☐ NO ☐
- Are signs posted on the containment system to direct boats to this site? **s. A27** YES ☐ NO ☐
- Are large vessels moored appropriately (i.e. not moored to cage a support system rails or stanchions)? **s. A29** YES ☐ NO ☐ N/A ☐

10. FISH HANDLING

Note: This section should only be completed if the Inspector is on site and can observe an activity where the following precautions are applicable.

- Spotters are being used during fish handling activities or when a large vessel is operating nearby? **s. A31** YES ☐ NO ☐ N/A ☐
- Appropriate use of catch nets when, harvesting, grading, sampling or moving live fish outside of net cages? **s. A32** YES ☐ NO ☐ N/A ☐

11. PREDATOR CONTROL

- Is there a pattern of predator attacks resulting in mortalities occurring at this farm site? YES ☐ NO ☐

If yes has the operator of the site implemented measures to prevent loss of stock and containment structure damage? **s. A33** YES ☐ NO ☐

If applicable, what are these measures? _____

_____

_____

ADDITIONAL COMMENTS/OBSERVATIONS _____

_____

_____

_____

_____

_____

MINISTRY OF ENVIRONMENT
FINFISH AQUACULTURE WASTE CONTROL REGULATION (FAWCR)
COMPLIANCE INSPECTION CHECKLIST

OPERATION DESCRIPTION Incident Number: _____

Company Name: _____ Location: _____

Site Name: _____ Aquaculture Licence Number: _____

MOE Registration #. _____

Inspection Date and Time: _____

Person(s) Interviewed: _____

Inspection Completed by: _____

General Comments: _____

Expected date of peak biomass: _____

A. BEST MANAGEMENT PRACTICE PLAN (Section 8 – FAWCR)	**IN COMPLIANCE**
• Is there a copy of the BMP available at the facility?	YES ☐ NO ☐
• If answer is No, provide reason, and indicate status of BMP document	
• Does the BMP contain a statement that it has been endorsed by the operator?	YES ☐ NO ☐
• Has the BMP been reviewed and understood by the staff at the facility?	YES ☐ NO ☐
• Does the BMP included a fish kill contingency plan?	YES ☐ NO ☐
• Does the plan identify fish kill thresholds?	YES ☐ NO ☐
• Does the plan provide contact phone numbers?	YES ☐ NO ☐
If answer to any of above is No, provide details:	
• Does the BMP provide specific sections describing how the facility meets the following objectives:	
• Continual reduction of number and quantity of wastes?	YES ☐ NO ☐
• Continual improvement in feed conversion ratio?	YES ☐ NO ☐
• Prevention of spillage of feed?	YES ☐ NO ☐
• Prevention of attraction/access of wildlife to feed?	YES ☐ NO ☐
• Prevention of access by wildlife to containment structures?	YES ☐ NO ☐
• Does the BMP contain a list of potentially harmful materials incl. disinfectants?	YES ☐ NO ☐

B. MANAGEMENT PRACTICES **Environmental Management Act, s. 3 (2) if Not according to BMP**

1. BLOODWATER DISPOSAL

- Are fish live hauled to a processing plant? YES ☐ NO ☐
  If Yes, list species;

  If No, is blood water disposed at the processing plant? YES ☐ NO ☐
  If No, please explain treatment prior to discharge, and volume and location of discharge:

2. NET TREATMENT, CLEANING AND WASTE DISPOSAL

- Are nets treated with anti-foulants used at the farm? YES ☐ NO ☐

  If Yes, what compounds are used? List both commercial product name and active ingredient

- Provide name of net cleaning company, location and how often nets cleaned.

- Are nets ever cleaned on site? YES ☐ NO ☐
  If Yes, indicate method used and how waste (i.e., fouling) is disposed.

3. DISINFECTANT USE AND DISPOSAL

- Are disinfectants used on site? YES ☐ NO ☐
  a) If Yes, list types and purposes of use.

  b) How and where are disinfectants stored during use?

- How are used disinfectants disposed?

4. MORT STORAGE AND DISPOSAL

- Are morts stored on site prior to disposal? YES ☐ NO ☐
  If Yes, how are morts stored?

- What is the frequency of removal? _____
- Describe method of disposal, location, and name of disposal company if contractor used.

_____

_____

_____

5. REFUSE STORAGE AND DISPOSAL

- Is refuse stored on site prior to disposal? YES ☐ NO ☐

  Describe how and where stored. _____

  _____

  _____

  Describe method of disposal. _____

  _____

  _____

6. FUEL/PRODUCT USE, STORAGE AND CONTAINMENT

- Are diesel tanks protected with containment? YES ☐ NO ☐
- Is the generator set protected with containment? YES ☐ NO ☐
- Are all other fuels/products securely stored and protected from spillage? YES ☐ NO ☐

  If No, explain improper storage, and plans for correcting situation including completion date.

  _____

  _____

C. SEWAGE TREATMENT AND DISPOSAL (Section 7 – FAWCR)

- Does your current method of sewage disposal meet the requirements of the FAWCR? YES ☐ NO ☐

  If No, explain how sewage treated now, and when system will be brought into compliance with the FAWCR.

  _____

  _____

- Are sewage inspection/maintenance records kept on site? YES ☐ NO ☐

D. SPILL RESPONSE

- Is spill equipment stored on site and maintained on a regular basis? YES ☐ NO ☐
- Is a spill contingency plan available on site? YES ☐ NO ☐
- If Yes, have staff been trained on its implementation YES ☐ NO ☐
- Is the Spill Reporting Number (1-800-663-3456) posted on site? YES ☐ NO ☐

E. WATER USE AND LICENCING **Water Act, s. 41 (1)(p)**

- What is the source of fresh water? _____
- What purpose does this farm use water? _____
- If lake or stream water is utilized, is there a water licence? YES ☐ NO ☐

  If Yes, provide licence number or date of application and file number. _____

  _____

  _____

F. WILDLIFE PREDATOR TRAPPING **Wildlife Act, s. 11(8)**

- Have any wildlife (otters, mink, etc) been trapped over the last year? YES ☐ NO ☐
  If Yes, provide name of trapper and licence number. _____

  _____

  _____

  List the type and number of species trapped. _____

  _____

  _____

  Are the species live trapped? YES ☐ NO ☐

ADDITIONAL COMMENTS/OBSERVATIONS

_____

_____

_____

_____

_____

_____

BRITISH COLUMBIA
The Best Place on Earth

SITE INSPECTION COMPLIANCE REPORT – MAL Regulatory Issues

Page 1 of ____

Report Section	Compliant*			Report Section	Compliant*		
1. Operation Description	n/a			7. Therapeutant Use & Records	Yes ☐	No ☐	CNBD ☐
2. Terms and Conditions	Yes ☐	No ☐	CNBD ☐	8. Net Cage Inspections	Yes ☐	No ☐	CNBD ☐
3. Escape Reports	Yes ☐	No ☐	CNBD ☐	9. Boat Docking	Yes ☐	No ☐	CNBD ☐
4. Inventory / Inspection Records	Yes ☐	No ☐	CNBD ☐	10. Fish Handling	Yes ☐	No ☐	CNBD ☐
5. Best Management Practices Plan	Yes ☐	No ☐	CNBD ☐	11. Predator Control	Yes ☐	No ☐	CNBD ☐
6. Escape Response	Yes ☐	No ☐	CNBD ☐				

Company Name _____
Site Name _____
Site Ref. No. _____
Person Interviewed _____
Signature _____
MAFF Inspector _____
Date of Inspection _____
Case File No.

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Section of Aquaculture Regulation/Fisheries Act Contravened	Required/Recommended Measures	Compliance Follow-up Date	Date of Required Response to Ministry

ADDITIONS AND/OR CHANGES MAY BE MADE TO THIS DOCUMENT BEFORE IT IS FORWARDED TO THE LICENCE HOLDER'S MAIN OFFICE
MAIN OFFICE MUST CONFIRM COMPLIANCE FOR ANY ISSUES FOUND NOT IN COMPLIANCE OR FOR WHICH COMPLIANCE COULD NOT BE DETERMINED

General comments on overall condition and operations of site: _____

Signature of Inspector: _____
Date of Senior Inspector Review: _____
Date Forwarded to Head Office: _____

BRITISH COLUMBIA
The Best Place on Earth

SITE INSPECTION COMPLIANCE REPORT – MAL Regulatory Issues

Site Ref. No.: _____
Person Interviewed (initial) _____
MAFF Inspector (initial) _____
Case File No.

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Section of Aquaculture Regulation/Fisheries Act Contravened	Required/Recommended Measures	Compliance Follow-up Date	Date of Required Response to Ministry

ADDITIONS AND/OR CHANGES MAY BE MADE TO THIS DOCUMENT BEFORE IT IS FORWARDED TO THE LICENCE HOLDER'S MAIN OFFICE
MAIN OFFICE MUST CONFIRM COMPLIANCE FOR ANY ISSUES FOUND NOT IN COMPLIANCE OR FOR WHICH COMPLIANCE COULD NOT BE DETERMINED

Signature of Inspector: _____
Date of Senior Inspector Review: _____
Date Forwarded to Head Office: _____

BRITISH COLUMBIA
The Best Place on Earth

SITE INSPECTION COMPLIANCE REPORT – MOE Regulatory Issues

Inspection Section	Compliant*	Inspection Section	Compliant*
A. Best Management Practices Plan	Yes ☐ No ☐	C. Sewage Treatment & Disposal	Yes ☐ No ☐
B. Management Practices	Yes ☐ No ☐	D. Spill Response	Yes ☐ No ☐
a) Blood Water Disposal	Yes ☐ No ☐	E. Water Use and Licensing	Yes ☐ No ☐
b) Net Treatment, Cleaning & Waste Disposal	Yes ☐ No ☐	F. Wildlife Predator Trapping	Yes ☐ No ☐
c) Disinfectant Use and Disposal	Yes ☐ No ☐		
d) Mort Storage and Disposal	Yes ☐ No ☐		
e) Refuse Storage and Disposal	Yes ☐ No ☐		
f) Fuel/Product Use, Storage & Containment	Yes ☐ No ☐		

Case File No. _____
Company Name _____
Site Name _____
Person Interviewed _____
Site Ref. No. (MAL) _____
Signature _____
MAL Inspector _____
Date of Inspection _____

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Inspection Section (above)	Legislation Contravened	Required/Recommended Measures	Compliance Follow-up Date	Date of Required Response to Ministry

Service of this notice does not preclude the ministry from pursuing prosecution and/or administration action for the above-listed non-compliance issues.

Other Non-Compliance observed: _____

Signature of Inspector: _____
Date of Chief Inspector Review: _____
Date Forwarded to Head Office: _____
Date Forwarded to MOE: _____

Summary of Record-Keeping Requirements for Marine Commercial Finfish Aquaculture Facilities in British Columbia

This document summarizes select portions of the *Aquaculture Regulation* (78/02) under the provincial *Fisheries Act*. This document is not a legal authority and in no event will the Province be liable or responsible for damages of any kind arising out of the use of this summary. Persons who need to rely on the text of the regulation for legal and other purposes should obtain the official printed version.

Type of Record	Specific Area	Contents of record	Retention Time	Location of record	Availability to an aquaculture inspector	Relevant section of regulation
FISH	Inventory	For each containment structure (net cage, bag type, etc.), licence holders must maintain accurate written records of: • the transport, transfer and introduction of fish into or away from the facility • the weekly fish mortalities, including the causes and the numbers attributable to each cause • all fish sales from the facility, including number and destination of fish sold • the source and number of each group/lot/stock of fish at the facility • each escape of fish from the facility	Unspecified. Holders should maintain records for a reasonable period of time Records should be available at the facility until the lot of finfish is harvested or removed from the facility	At the facility until the lot of finfish is harvested or removed from the facility Unspecified after fish are harvested or removed from the facility	Within 48 hrs upon request; immediately upon request by an inspector who is at the facility	s. 5(1)- 5(2)
	Drugs	Licence holders must keep a record of the following information for a drug administered to the holder's fish: • aquaculture licence number, name of licence holder, location of facility • species of fish cultured/held • name of the veterinarian who prescribed any drugs • a log that: names any drugs, specifies how drugs were administered, specifies the treatment schedule including the date treatment commenced and ended, names and includes the signature of the person responsible for administering each treatment.	Unspecified. Holders should maintain records for a reasonable period of time	Unspecified	Within 48 hrs upon request	s. 8(1)- 8(3)
	Harvests	Provide a statement to a fish processing plant or buying station to which fish are delivered from the facility, at the time of delivery. This statement must include the: • signature of the licence holder (or the licence holder's agent) and signature of the person responsible for administering the drug treatment discussed below. • aquaculture licence number	1yr by holder and 1yr by plant/ station licensee	Unspecified	Within 48 hrs upon request	s. 8(4)- 8(7)

Summary of Record-Keeping Requirements for Marine Commercial Finfish Aquaculture Facilities in British Columbia

FISH	Harvests (continued)	• species of fish • date of harvest • name of processing plant or buying station the fish were delivered to • quantity of fish harvested • a lot number that identifies the shipment of fish • date and record of most recent drug treatment, if any, with a drug or date of the final day of the withdrawal period for an administered drug (whichever is latest). This should include the name of the drug, treatment schedule, the dates treatment commenced and finished, the prescribed withdrawal period, name of veterinarian (if any) who prescribed the drug, and the name and signature of the person responsible for administering the treatment	1yr by holder and 1yr by plant/ station licensee	Unspecified	Within 48 hrs upon request	s. 8(4)- 8(7)
EQUIPMENT	Cage Support System	Record of daily visual inspections and repairs of the cage support system	1 year from date of daily visual inspection	At the facility	Within 48 hrs upon request; immediately upon request by an inspector who is at the facility	s. 6(1) Appendix 2, s.5(e)
EQUIPMENT	Net Cages: *regular maintenance*	Licence holders must have a written maintenance record *for each net cage deployed* which includes: • the inventory control number (see Appendix 2, section 20 for specifications on tagging each net cage) • dimensions and mesh size • record of most recent complete out-of-water servicing and inspection (see Appendix 2, section 18 for complete requirements for this servicing and inspection) ➢ when cage net mesh is tested as part of a complete out-of-water servicing and inspection, the person who carries out this servicing and inspection must complete and sign a net testing record (specific details of this requirement can be found in the "British Columbia Net Cage Mesh Strength Testing Procedure, Version 1") • the accumulated time in water since most recent complete out-of-water servicing and inspection • a description and the dates of each inspection (by divers or other comparable method) since the most recent complete out-of-water servicing and inspection • a description, the dates and reasons for all repairs made since most recent complete out-of-water servicing and inspection	6 months after the most recent complete out-of-water servicing and inspection	At the facility	Within 48 hrs upon request; immediately upon request by an inspector who is at the facility	s. 6(1) Appendix 2, s.18-21 "British Columbia Net Cage Mesh Strength Testing Procedure, Version 1"

Summary of Record-Keeping Requirements for Marine Commercial Finfish Aquaculture Facilities in British Columbia

EQUIPMENT	Net Cages: *life history*	Licence holders must have a written record for each net cage that includes: • the inventory control number (see Appendix 2, section 20 for specifications on tagging each net cage) • manufacturer's name • year produced • dates and records of all complete out-of-water servicing and inspections since October 31, 2000 • date of retirement (if applicable)	1 year following retirement of net	Unspecified	Within 48 hrs upon request	s. 6(1) Appendix 2, s. 23-24
STAFF PRACTICES	Best Management Practices (BMP) Plans	Licence holders must maintain a copy of a BMP plan at the facility; this plan must include: • a description of specific practices and procedures used to achieve the escape prevention objectives in Section 34(1) • a statement that the plan has been reviewed and endorsed by the licence holder • a statement that individuals responsible for implementation of the plan understand and have received training in the plan Note: Other government policies and regulations may require submission of information in a BMP plan format; however the above requirements refer only to BMP plans prescribed under the *Aquaculture Regulation* (78/02)	Always	At the facility	Within 48 hrs upon request; immediately upon request by an inspector who is at the facility	Appendix 2, s. 34
	Escape Response Plans	Licence holders must have a written escape response plan; plans must be posted in visible locations at their aquaculture facilities; contents and locations of plans must be made known to all staff.	Always	At the facility	Within 48 hrs upon request; immediately upon request by an inspector who is at the facility	Appendix 2, s. 35

NOTE:
A licence holder must produce for inspection any record or Best Management Practices plan required to be kept under this regulation within 48 hours of a request by a provincial aquaculture inspector. Records that are required under this regulation to be kept at the facility must be provided immediately upon request by an inspector who is at the facility. An inspector may enter the facility any time during normal business hours (see section 12(3) of the *Aquaculture Regulation* for details).

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

1331735 Ontario Limited
(Mainstream Canada Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

1331735 Ontario Limited
(Mainstream Canada Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Creative Salmon Company Ltd.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Creative Salmon Company Ltd.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☐ No ☒	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☐ No ☐ CNBD ☒
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

EWOS Canada Ltd.
(Mainstream Canada Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Daily Above-Water Inspections – Daily inspections of cage support systems incomplete	Ross Passage (314), McIntyre Lake (1291)

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

EWOS Canada Ltd.
(Mainstream Canada Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Grieg Seafood BC Ltd.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Grieg Seafood BC Ltd.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☐ No ☒	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Marine Harvest Canada Inc.
Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Best Management Practices – No statement that BMP has been reviewed and endorsed	Mahatta East (1338)

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Marine Harvest Canada Inc.
Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☐ No ☒
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Nutreco Canada Inc.
(Marine Harvest Canada Inc.)
Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Therapeutant Use and Records – log incomplete	Lochlash Bay (884)

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☐ No ☒
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Nutreco Canada Inc.
(Marine Harvest Canada Inc.)
Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Water Use and Licensing – no water licence in place	Kid Bay (1691)

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☐ No ☒
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☐ No ☒	Predator Control	Yes ☒ No ☐

Omega Pacific Seafarms Inc.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Inventory and Inspection records – Records incomplete	Jane Bay (270)
Out of water records – recent out of water service records not on site	Jane Bay (270)
Out of water records – records not complete	Jane Bay (270)
Escape response - plan does not include step by step procedures for preventing further escape	Jane Bay (270)
Net cage and system inspections – All cages are not marked with inventory number	Jane Bay (270)
Net cage and system inspections – All net audits not performed satisfactorily	Jane Bay (270)

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Omega Pacific Seafarms Inc.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
nventory/Inspection Records	Yes ☐ No ☒	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☐ No ☐ CNBD ☒
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Pan Fish Canada Ltd.
(Marine Harvest Canada Inc.)
Company Name

*IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Out of Water records – Records incomplete	Jervis Inlet (303)

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☐ No ☒
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☐ No ☒
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☐ No ☒
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Pan Fish Canada Ltd.
(Marine Harvest Canada Inc.)
Company Name

*IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Fuel products storage and containment – generator set not protected with containment	Marsh Bay (1351)
Sewage treatment and disposal – sewage facilities on site do not meet requirements	Marsh Bay (1351)
Sewage treatment and disposal – sewage maintenance records not kept on site	Marsh Bay (1351)
Water Use and Licensing – no water licence in place	Chancellor Channel (790), Shaw Point (1136)

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*		Report Section	Compliant*	
Terms and Conditions	Yes☒	No ☐	Therapeutant Use & Records	Yes ☒	No ☐
Escape Reports	Yes ☒	No ☐	Net Cage Inspections	Yes ☒	No ☐
Inventory/Inspection Records	Yes ☒	No ☐	Boat Docking	Yes ☒	No ☐
Best Management Practices Plan	Yes ☒	No ☐	Fish Handling	Yes ☒	No ☐ CNBD ☐
Escape Response	Yes ☒	No ☐	Predator Control	Yes ☒	No ☐

Saltstream Engineering Ltd.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*		Report Section	Compliant*	
Registration	Yes ☒	No ☐	Fuel Storage and Containment	Yes ☒	No ☐
Best Management Practices	Yes ☒	No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒	No ☐
Disposal of Blood Water	Yes ☒	No ☐	Environmental Management	Yes ☒	No ☐
Disposal of Net Cleaning Waste	Yes ☒	No ☐	Water Licence	Yes ☒	No ☐
Storage and Disposal of Disinfectant	Yes ☒	No ☐	Wildlife Predation Trapping Licence	Yes ☒	No ☐
Storage and Disposal of Morts	Yes ☒	No ☐	Wildlife Hunting Licence	Yes ☒	No ☐
Storage and Disposal of Refuse	Yes ☒	No ☐			

Saltstream Engineering Ltd.

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Stolt Sea Farm Inc.
(Marine Harvest Canada Inc.)
Company Name

*IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Stolt Sea Farm Inc.
(Marine Harvest Canada Inc.)
Company Name

*IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☐ No ☒
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Target Marine Aquaculture Ltd.
(Grieg Seafood BC Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Underwater inspections of active net cages – net cages not inspected every 60 days	Site 13 (746)

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Target Marine Aquaculture Ltd.
(Grieg Seafood BC Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☒ No ☐
Inventory/Inspection Records	Yes ☒ No ☐	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☒ No ☐ CNBD ☐
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Tofino Aquafarms Ltd.
(Creative Salmon Company Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☒ No ☐
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Tofino Aquafarms Ltd.
(Creative Salmon Company Ltd.)

Company Name

***IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS**

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number

General comments: _____

Ministry of Agriculture and Lands
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Terms and Conditions	Yes ☒ No ☐	Therapeutant Use & Records	Yes ☒ No ☐
Escape Reports	Yes ☒ No ☐	Net Cage Inspections	Yes ☐ No ☒
Inventory/Inspection Records	Yes ☐ No ☒	Boat Docking	Yes ☒ No ☐
Best Management Practices Plan	Yes ☒ No ☐	Fish Handling	Yes ☐ No ☐ CNBD ☒
Escape Response	Yes ☒ No ☐	Predator Control	Yes ☒ No ☐

Yellow Island Aquaculture (1994) Ltd.

Company Name

*IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Inventory and Inspection Records – Records incomplete	Yellow Island (216) 2006-01-19
Net cage and system inspections – jump net less than 1 meter	Yellow Island (216) 2006-01-19
Net cage and system inspections – insufficient weight to prevent billowing	Yellow Island (216) 2006-01-19

General comments: _____

Ministry of Environment
SITE INSPECTION SUMMARY COMPLIANCE REPORT – 2006 Inspection Cycle

Report Section	Compliant*	Report Section	Compliant*
Registration	Yes ☒ No ☐	Fuel Storage and Containment	Yes ☒ No ☐
Best Management Practices	Yes ☒ No ☐	Sewage Treatment, Disposal and Record Keeping	Yes ☒ No ☐
Disposal of Blood Water	Yes ☒ No ☐	Environmental Management	Yes ☒ No ☐
Disposal of Net Cleaning Waste	Yes ☒ No ☐	Water Licence	Yes ☒ No ☐
Storage and Disposal of Disinfectant	Yes ☒ No ☐	Wildlife Predation Trapping Licence	Yes ☐ No ☒
Storage and Disposal of Morts	Yes ☒ No ☐	Wildlife Hunting Licence	Yes ☒ No ☐
Storage and Disposal of Refuse	Yes ☒ No ☐		

Yellow Island Aquaculture (1994) Ltd.

Company Name

*IF NOT IN COMPLIANCE, SEE BELOW FOR DETAILS

Area(s) of Non-Compliance	Site(s) Name and MAL Reference Number
Wildlife Predator Trapping – Mink trapped and relocated, with no trapping licence	Yellow Island (216)

General comments: _____

MARINE FINFISH COMPL

COMPLIANCE ISSUE	LEGISLATION CONTRAVENED	LICENSEE ACTION REQUIRED
Disposal of blood water directly to environment	Section 3(2) Waste Management Act/ Section 36(3) Fisheries Act (federal)	Subject to the Regional Waste Manager's direction
Disposal of net cleaning waste directly to environment resulting from major net cleaning (does not include in situ day to day maintenance)	Section 3(2) Waste Management Act/Section 36(3)Fisheries Act (federal)	Subject to the Regional Waste Manager's direction
Disposal of morts w/o permit/approval	Section 3(2) Waste Management Act	Cease burning/burying etc. of morts. Dispose at approved facility
Non marine mammal predator (wildlife) trapping/killing w/o permit or using licensed trapper	Section 11 and 26 Wildlife Act	Cease trapping/killing. Obtain a permit or the services of licensed trapper for predator control/or closed season authorization.
Disposal of refuse – burning or burying of wastes	Section 3(2) Waste Management Act	Cease burning/burying of wastes
Predator prevention carcass disposal to land w/o permit/approval	Section 3(2) Waste Management Act	Dispose carcass at approved facility or Apply for Waste Management Permit and Land Tenure for disposal site
Disposal of disinfectants directly to environment	Section 3(2) Waste Management Act/ Section 36(3) Fisheries Act (federal)	Follow disposal requirements of MSDS and/or dispose at an approved disposal facility
Fail to provide 110% containment for fuel storage	BC Fire Code (1998)	Install 110% containment for fuel.
Fail to conduct environmental monitoring of a new facility prior to applying for registration	Section 3(1) - Finfish Aquaculture Waste Control regulation	Conduct environmental monitoring
Stock a facility with fish without registering the facility in accordance with the Aquaculture Waste Control regulation	Section 3(2) - Finfish Aquaculture Waste Control regulation	Submit registration to the Regional Waste Manager
Effective September 21, 2003 – mean free sulphide concentration on soft bottom at or beyond 30 meters from 0 meter station is statistically significantly greater than 6000 micormolar	Section 4(1) - - Finfish Aquaculture Waste Control regulation	Submit a remedial action plan to the Regional Waste Manager, and immediately thereafter implement the plan
Effective September 21, 2003 – mean taxon richness or mean total abundance at a sampling facility on a soft bottom at or beyond the tenure perimeter is statistically significantly different than the mean reference or baseline	Section 4(2) - - Finfish Aquaculture Waste Control regulation	Submit a remedial action plan to the Regional Waste Manager, and immediately thereafter implement the plan
Effective September 21, 2003 – Fail to conduct biological monitoring and and comply with pre-stocking requirements when mean free sulphide concentration on a soft bottom at or beyond the tenure perimeter is statistically significantly greater than the mean reference or baseline sulphide concentration	Section 5 – Finfish Aquaculture Waste Control regulation	Conduct biological monitoring

The enforcement responses identified in the matrix are considered the preferred approach, however, the specific circ
between agencies is required on some issues of non-compliance prior to determining an enforcement response.

LIANCE MATRIX – May 12, 2003

TIMELINE FOR COMPLETION OF REQUIRED ACTION	LICENSEE FOLLOW-UP	ENFORCEMENT ACTION/AGENCY
As directed	As directed	MAFF to forward non-compliance occurrences to Regional Waste Manager on a case by case basis. Action to be determined based upon a review of the specific fact pattern and compliance history.
As directed	As directed	MAFF to forward non-compliance occurrences to Regional Waste Manager on a case by case basis. Action to be determined based upon a review of the specific fact pattern and compliance history.
Immediately	Provide documentation to inspector to verify use of approved facility	Consult with WLAP for direction. Minor amount of morts may result in issuance of ticket whereas major amounts likely to result in formal investigation
Immediately	Provide documentation to inspector to confirm issuance of a permit or the use of licensed trapper	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Immediately	Provide written confirmation as to disposal methods to inspector within 14 days	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Within 30 days	Provide documentation to inspector confirming use of approved facility or copy of applications	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Immediately	Confirm disposal practices/facility to inspector within 14 days	Consult with WLAP for direction.
N/A	Provide written confirmation of resolution to inspector within 60 days.	File to be referred to the Office of the Fire Commissioner for resolution
Subject to Regional Waste Manager's direction	Provide documentation to inspector confirming environmental monitoring has been completed and submitted to Regional Waste Manager	Formal investigation by WLAP
Within 14 days	Provide documentation to inspector confirming registration submitted to Regional Waste Manager	Formal investigation by WLAP
Within 30 days of environmental monitoring	Implement remedial action plan	Formal investigation by WLAP
Within 30 days of environmental monitoring	Implement remedial action plan	Formal investigation by WLAP
As determined by Regional Waste Manager	Submit biological monitoring results as directed by Regional Waste Manager	Formal investigation by WLAP.

cumstances of each non-compliance are to be assessed in determining the appropriate enforcement response. Consultation

MARINE FINFISH COMPL

COMPLIANCE ISSUE	LEGISLATION CONTRAVENED	LICENSEE ACTION REQUIRED
Effective March 21, 2004 – Restocks facility when mean free sulphide concentration exceeds the standards prescribed in Section 6 of the Finfish Aquaculture Waste Control regulation	Section 6(2) – Finfish Aquaculture Waste Control regulation	Action to be determined by the Regional Waste Manager
Exceed maximum daily discharge rate of domestic sewage 2.5 cubic meters/day	Section 7(b)(i) - Finfish Aquaculture Waste Control regulation	Install system to meet the regulation requirements
Fail to treat sewage with a septic tank designed with a retention time of less than two days prior to discharge, or device with a concentration of total suspended solids exceeding 130 mg/l	Section 7(b)(ii) - Finfish Aquaculture Waste Control regulation	Install system to meet the regulation requirements
Disposal of sewage at a discharge point less than 15 meters below surface of the water	Section 7(b)(iii) - Finfish Aquaculture Waste Control regulation	Install a 15 meter outfall pipe as per regulation requirements.
Fail to maintain records related to construction/operation and maintenance of sewage treatment works for inspection by manager or officer	Section 7(iv) - Finfish Aquaculture Waste Control Regulation.	Ensure records are maintained
Fail to keep a copy of the BMP plan at facility	Section 8(3)(a) - Finfish Aquaculture Waste Control Reg.	Ensure BMP Plan is onsite at facility
Fail to make the BMP plan available upon request of the manager or an officer	Section 8(3)(a) - Finfish Aquaculture Waste Control Reg.	Produce a copy of the BMP Plan
Fail to amend the BMP plan whenever there is a change in the facility which materially increases the release/potential release of harmful materials	Section 8(3)(b) - Finfish Aquaculture Waste Control Reg.	Amend the BMP plan
Fail to conduct environmental monitoring	Section 9 - Finfish Aquaculture Waste Control Reg.	Undertake environmental monitoring
Fail to submit environmental monitoring results	Section 10 - Finfish Aquaculture Waste Control Reg.	Submit environmental monitoring results to Regional Waste Manager
Fail to report information required in Section 10(5) of the Aquaculture Waste Control regulation	Section 10(5) - Finfish Aquaculture Waste Control Reg.	Submit environmental monitoring results to Regional Waste Manager
Fail to notify Regional Waste manager w/i 24 hrs of implementing fish kill contingency plan	Section 10(6) - Finfish Aquaculture Waste Control Reg.	Notify Regional Waste Manager

The enforcement responses identified in the matrix are considered the preferred approach, however, the specific circ
between agencies is required on some issues of non-compliance prior to determining an enforcement response.

LIANCE MATRIX – May 12, 2003

TIMELINE FOR COMPLETION OF REQUIRED ACTION	LICENSEE FOLLOW-UP	ENFORCEMENT ACTION/AGENCY
As determined by the Regional Waste Manger	As determined by the Regional Waste Manger	Formal investigation by WLAP.
Within 30 days	Provide documentation to inspector confirming installation of new system	Formal investigation by WLAP.
Within 30 days	Provide documentation to inspector confirming installation of new system	Formal investigation by WLAP.
Within 30 days	Provide documentation to inspector confirming outfall pipe extension.	Formal investigation by WLAP.
Immediately	Provide documentation to inspector confirming records are maintained	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Within 60 days	Provide written confirmation to inspector within 30 days of the date the BMP's were finalized that BMP's are onsite at facility	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Immediately	N/a	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Within 30 days	Provide written confirmation to inspector within 7 days of the BMP being amended	Violation ticket for first offence issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Within 30 days of prescribed sampling timeframe, or as directed by Regional Waste Manager	As determined by Regional Waste Manager	Formal investigation by WLAP.
Within 14 days	Confirmation to inspector that results forwarded to Regional Waste Manager	Formal investigation by WLAP.
Within 14 days	Confirmation to inspector that results forwarded to Regional Waste Manager	Formal investigation by WLAP.
Immediately	N/A	Formal investigation by WLAP.

cumstances of each non-compliance are to be assessed in determining the appropriate enforcement response. Consultation

MARINE FINFISH COMPL

COMPLIANCE ISSUE	LEGISLATION CONTRAVENED	LICENSEE ACTION REQUIRED
Exceed Management plan biomass levels	Fisheries Act – Condition of Licence	Submit a revised management plan or adjust Production level
Unapproved species on site	Fisheries Act – Condition of Licence	Submit a revised management plan or remove unauthorized species
Operating a facility without a licence	Fisheries Act	Fisheries Act
Failure to submit required reports or records	Fisheries Act	Submit requested reports
Failure to report suspected escapes verbally or in writing	Fisheries Act – Aquaculture Regulation	Report 24 hours verbal In writing 7 days Implement immediate corrective action
Failure to report an escape verbally or in writing	Fisheries Act – Aquaculture Regulation	Report 24 hours verbal In Writing 7 days Implement immediate corrective action
Unauthorized release of fish	Fisheries Act – Aquaculture Regulation	Report 24 hours verbal In Writing 7 days Implement immediate corrective action
Unauthorized escape of fish	Fisheries Act – Aquaculture Regulation	Report 24 hours verbal In Writing 7 days Implement immediate corrective action
Fail to comply with therapeutant use and drug record keeping	Fisheries Act - Aquaculture Regulation	Adjust record keeping to regulations
Fail to comply with requirements for Inventory, training and maintenance Records and Reports	Fisheries Act – Aquaculture Regulation	Adjust record keeping to regulations
Processing fish on site w/o license	Fisheries Act – Aquaculture Regulation	Cease activity.
Obstruction	Fisheries Act – Aquaculture Regulation	N/A
Containment Structures, Cage Support, Design Installation and Maintenance	Fisheries Act – Aquaculture Regulation Appendix 2	Consult with MAFF on design and construction approval requirements

The enforcement responses identified in the matrix are considered the preferred approach, however, the specific circ
between agencies is required on some issues of non-compliance prior to determining an enforcement response.

LIANCE MATRIX – May 12, 2003

TIMELINE FOR COMPLETION OF REQUIRED ACTION	LICENSEE FOLLOW-UP	ENFORCEMENT ACTION/AGENCY
Within 30 days	Verification to MAFF in writing of reduced production or submission of a management plan	Need for consultation between MAFF and WLAP to evaluate environmental impacts. If non-compliance has resulted in environmental waste standard being exceeded, requires referral to WLAP for investigation. Review of compliance history by MAFF Inspection staff, and where appropriate, in liaison with biological staff, for farm to determine status of MP history for site, and/or previous warnings to company. If compliance history is poor, formal referral to WLAP for investigation. For new instances of excess biomass production, violation ticket to be issued where the company has not responded to MAFF's initial inspection request. (the ticket will be for failure to comply with licence conditions) Formal investigation by WLAP for subsequent occurrences.
Within 30 days	Verification to MAFF in writing by way of management plan submission or company verifies they have removed unauthorized species	Depending upon review of compliance history of company, MAFF refers the matter for investigation to WLAP immediately, or subsequent to the company failing to submit a revised management plan.
		Referral directly to WLAP – noting differences between unlicensed operations and delays in licence renewals.
Within requested timeframe	Reports to be submitted within 60 days of the identified deadline	Violation tickets or warnings if reports not received and responded to MAFF request. Formal investigation by WLAP for subsequent occurrences.
Immediate/seven days	N/A	Violation ticket or warning issued by MAFF where the report is suspected and no fish are lost. Formal investigation by WLAP for subsequent occurrences or if the inspector believes there has been a significant escape.
Immediate/seven days	N/A	Warning or violation ticket issued by MAFF. Where the inspector believes there may be a significant loss of fish, or for repeat occurrences refer to WLAP for formal investigation and RCC.
Immediate/seven days	N/A	Referral to WLAP for investigation and RCC.
Immediate/seven days	N/A	Where there may be a significant loss of fish the file to be turned over directly to WLAP for formal investigation and RCC.
Immediate	Verification to MAFF in writing to confirm adjustment has been made.	Warning or violation ticket for noncompliance issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
Within 30 days	Verification to MAFF in writing to confirm adjustment has been made	Warning and or violation ticket issued by MAFF if corrective measures have not been implemented. Referral to WALP for continued/subsequent occurrences.
Immediate	Verification to MAFF in writing may be requested	Warning or violation ticket issued by MAFF. Formal investigation by WLAP for subsequent occurrences.
N/A	N/A	Referral to WLAP for formal investigation.
Within 30 days	Verification to MAFF in writing the company has reviewed and implemented corrective measures	Warning or violation ticket issued by MAFF. Formal investigation by WLAP for continued/subsequent occurrences.

cumstances of each non-compliance are to be assessed in determining the appropriate enforcement response. Consultation

MARINE FINFISH COMPL

COMPLIANCE ISSUE	LEGISLATION CONTRAVENED	LICENSEE ACTION REQUIRED
Fail to meet Net Cage Mesh Strength	Fisheries Act – Aquaculture Regulation Appendix 2	Net strength failure – company to immediately remove net.
Fail to maintain Net Servicing Records and Net Tagging	Fisheries Act – Aquaculture Regulation Appendix 2	Implement measures to correct deficiencies in record keeping
Improper Boat Operations	Fisheries Act – Aquaculture Regulation Appendix 2	Implement corrective measures to ensure proper boat usage
Fail to comply with operational activities	Fisheries Act – Aquaculture Regulation Appendix 2	Implement corrective measures
Fail to implement/follow Best Management Practices	Fisheries Act – Aquaculture Regulation Appendix 2	Implement identified corrective measures
Fail to comply with training requirements for escape response	Fisheries Act – Aquaculture Regulation Appendix 2 - As to the development, posting and staff training associated with escape response	Implement identified corrective measures
Fail to implement corrective action to prevent further escapes	Fisheries Act – Aquaculture Regulation Appendix 2 - As to failure to ensure corrective action implemented to prevent further escapes; As to take measures to attempt to recapture	N/A
Use of lake or stream water without a water license	Section 41(1)(m) Water Act	Apply for Water license or cease use of water
Operating a facility without a tenure	Land Act	Land Act
Improvements located outside Land tenure boundaries	Land Act	Comply with existing tenure or arrange a meeting to discuss with LWBC (MAFF inspector to notify LWBC)
Improvements do not comply with Management plan	Land Act	Comply with existing management plan or arrange a meeting to discuss with LWBC and MAFF (MAFF inspector to notify LWBC and MAFF licensing section)

The enforcement responses identified in the matrix are considered the preferred approach, however, the specific circ
between agencies is required on some issues of non-compliance prior to determining an enforcement response.

IANCE MATRIX – May 12, 2003

TIMELINE FOR COMPLETION OF REQUIRED ACTION	LICENSEE FOLLOW-UP	ENFORCEMENT ACTION/AGENCY
Immediate	Verification to MAFF in writing that net has been removed	If non compliant to the request to remove net, referral to WLAP for investigation.
Within 30 days	Verification to MAFF in writing corrective measure have been implemented	Warning or Violation tickets issued by MAFF. Formal investigation by WLAP for continued/subsequent occurrences.
Within 30 days	Verification to MAFF in writing that corrective measures have been implemented	Warning or violation ticket issued by MAFF. Formal investigation by WLAP for continued/subsequent occurrences.
Within 30 days	Verification to MAFF in writing that corrective measures have been implemented	Warning or violation ticket issued by MAFF. Formal investigation by WLAP for continued/subsequent occurrences.
Within 30 days	Verification to MAFF in writing that corrective measures have been implemented	Warning or Violation ticket issued by MAFF. Formal investigation by WLAP for continued/subsequent occurrences.
Within 30 days	Verification to MAFF in writing that corrective measures have been implemented.	Warning or Violation ticket issued by MAFF. Formal investigation by WLAP for continued/subsequent occurrences.
Immediate	N/A	Formal investigation by WLAP
Within 30 days	Provide confirmation to inspector that use of water has ceased, or a license application has been submitted.	Upon referral, LWBC will review MAFF inspection report and notify the client of required action. MAFF and WLAP will be copied. If warranted, LWBC will commence enforcement action in coordination with WLAP.
		Referral directly to LWBC – noting differences between untenured operations and delays in tenure renewals. LWBC will review MAFF inspection report and notify the client in writing of necessary action. MAFF and WLAP will be cc'd. If warranted, LWBC will commence trespass action in coordination with WLAP.
Within 30 days	Provide confirmation improvements are within tenure or supply an amendment application package and new management plan	LWBC will review MAFF inspection report and notify the client in writing of necessary action. MAFF and WLAP will be cc'd. If warranted, LWBC will commence trespass action in coordination with WLAP.
Within 30 days	Provide confirmation improvements comply with management plan or submit new management plan	LWBC will review MAFF inspection report in consultation with MAFF Licencing Section and notify the client in writing of necessary action. MAFF and WLAP will be cc'd.

umstances of each non-compliance are to be assessed in determining the appropriate enforcement response. Consultation

B.C. Reg. 256/2002
O.C. 836/2002

Deposited September 12, 2002

Environmental Management Act

FINFISH AQUACULTURE WASTE CONTROL REGULATION

[includes amendments up to B.C. Reg. 321/2004]

Contents

Definitions

1 In this regulation:

"abundance"
means the number of individual organisms or percent cover of a particular taxon in the benthic community at the Linnaean classification system level of

(a) family, for soft bottoms, and

(b) class, for hard bottoms;

"application" means application under section 3;

"bag cage" means an enclosure in a marine environment made of material impermeable to water and used to contain finfish;

"baseline" means before a facility begins operating;

"Beggiatoa" is a genus of bacteria that forms white mats on the sediment surface in areas of intense organic enrichment;

"benthic" means on or in the seabed;

"benthic community" means the assemblage of organisms inhabiting the seabed;

"biota" means the benthic flora and fauna;

"BMP" means a Best Management Practices Plan described in section 8;

"Capitella" is a genus of polychaete that thrives in areas of intense organic enrichment;

"containment structures"
means net cages, 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;

"DGPS" means a differential global positioning system;

"domestic sewage"
means human excrement, water-borne human excretion or the water-carried wastes from liquid or non-liquid culinary uses, washing, cleansing, laundering, food processing or ice production;

"dry weight"
means the gravimetric determination of the total residue left in a vessel after drying feed of the type used at the facility at a temperature of 103 to 105 degrees Celsius until the weight of the residue is constant;

"epifauna" means animals that live on top of the substratum;

"facility" means a finfish aquaculture farm located in marine water at a site licensed under section 14 of the *Fisheries Act;*

"facility sampling station" does not include a reference station;

"finfish" means fish of the classes Agnatha, Chondrichthyes or Osteichthyes grown by an operator;

"fish kill"
means an amount of finfish equivalent to 4 000 kilograms or more that died within a 5 consecutive day period at a facility;

"footprint"
means the area of the seabed on which there is a measurable accumulation of particulate wastes, or waste by-products, originating from a containment structure or a containment structure array and deposited by normal ocean currents;

"free sulphide"
means sulphide ions not chemically bound to any other chemical constituent as measured following sections 3 to 5 of Protocols for Marine Environmental Monitoring (WLAP 2002);

"hard bottom"
means a seabed composed of rock, shell or other hard materials that cannot be sampled by sediment grab sampling devices;

"infauna" means animals that live within the substratum;

"L&WBCI" means the Land & Water British Columbia Inc.;

"macrofauna" means animals with body sizes on the scale of millimetres;

"MAFF" means the Ministry of Agriculture, Food and Fisheries of British Columbia;

"management plan"
means a Marine Commercial Finfish Aquaculture Management Plan required when applying for a licence for aquaculture under the *Fisheries Act,* for a tenure, or for a renewal of either;

"megafauna" means animals with body sizes on the scale of centimetres;

"mortalities" means facility raised finfish that

(a) have died, and

(b) are not harvested for human consumption;

"net cage" means a net enclosure used to contain finfish;

"operational monitoring" means gathering information as discussed in Schedule B;

"operator" means a person who oversees the operation of a facility and who

(a) owns the facility, or

(b) is authorized by the owner to act for the owner respecting the operation of the facility;

"peak biomass" means maximum biomass of finfish within a facility during a production cycle;

"perimeter of containment structure"
means the outside edge of the containment structure wherever the structure is located at the time of sampling;

"probable footprint"
means the likely footprint associated with proposed locations of containment structures, or containment structure arrays, determined by using a method which satisfies the criteria in Schedule B or by using an alternative method approved by a director;

"production cycle"
means the period of time from stocking the containment structures to the time of harvest or removal of all finfish from the containment structures;

"qualified professional"
means an applied scientist or technologist acting within that profession's field of professional practice who

(a) is registered in British Columbia with an appropriate professional association, acts under that professional association's code of ethics, and is subject to disciplinary action by that professional association, and

(b) through suitable education, experience, accreditation and knowledge may be reasonably relied on to provide advice in designing and conducting aquatic impact assessment programs;

"reference station" means a sampling station

(a) within 0.5 to 2.0 kilometres from the tenure,

(b) having the same types of habitats and similar hydrographic, physical and morphological characteristics as the facility sampling stations, and

(c) representing background variation;

"sampling station" means a location where samples are taken or variables are measured or observed;

"soft bottom"
means a seabed composed of gravel, sand, mud or similar materials that can be sampled using sediment grab sampling devices;

"statistically significant"
means an observed effect so large that it would rarely occur by chance as described in Section 7 of Protocols for Marine Environmental Monitoring (WLAP 2002);

"taxon richness" means the number of taxa in the benthic community at the Linnaean classification system level of

(a) family, for soft bottoms, and

(b) class, for hard bottoms;

"tenure" means

(a) a contiguous area of land that is owned, leased or otherwise lawfully occupied by a person, or

(b) areas of land whether contiguous or not that are occupied under a single

(i) lease, or

(ii) licence of occupation

granted under the *Land Act* for a facility;

"WLAP" means the Ministry of Water, Land and Air Protection of British Columbia;

"wastes"
includes finfish feed, finfish faeces, mortalities, bloodwater, materials from net washing, disinfectants, refuse and domestic sewage;

"zero metre station"
means a fixed, DGPS location, at the perimeter of the containment structure and on each transect described in Schedule B measured at higher high water referenced to chart datum.

[am. B.C. Reg. 321/2004, s. 10 (a) and (b).]

Introduction of waste into the environment

2
An operator may introduce waste, or cause or allow waste to be introduced, into the environment within the tenure occupied by the operator's facility if the operator and the facility satisfy the requirements of this regulation.

[en. B.C. Reg. 321/2004, s. 10 (c).]

Registration

3
(1) The operator of a facility that commences operation for the first time on or after the date this regulation comes into force must have monitored the facility in accordance with Schedule A before applying for registration of the facility under this regulation.

(2) Subject to subsection (3), an operator must not stock a facility with finfish unless the facility is registered under this regulation.

(3) On or before the date a facility commences operation, the operator must apply to a director for registration of the facility under this regulation.

(4) The application for registration under subsection (3) must be submitted directly to the director in electronic form, or in another form and manner acceptable to the director, and must include:

(a) the business name, mailing address, telephone number and fax number of the operator;

(b) the registered name and address of the operator;

(c) the common name and geographical description of the facility;

(d) location maps showing

(i) general location of the facility at 1:50 000 to 1:150 000, and

(ii) geo-referenced location of the facility to Crown lands tenure of the facility on British Columbia Geographic System (cadastral) map at 1:20 000;

(e) a 1:5 000 scale aerial view diagram showing the tenure boundaries and the proposed layout of all structures at the site;

(f) the aquaculture licence number issued under the *Fisheries Act;*

(g) the aquatic land tenure file number issued under the *Land Act;*

(h) in accordance with the provisions of Schedule A of this regulation,

(i) baseline inventory including currents information, if the facility commences operation after the coming into force of this regulation, and

(ii) currents information for existing facilities for which this information has not yet been provided under the Interim Monitoring Program conducted in 2000 and 2001 for WLAP;

(i) the design production rate in tonnes for each production cycle and the number and species of finfish to be stocked;

(j) the planned monthly feeding summary over the production cycle and stocking densities;

(k) the number and dimensions of containment structures to be used;

(l) the total dry weight of feed usage in tonnes, for the production cycle prior to registration, or, for new facilities, the estimated dry weight feed in tonnes expected to be used for the first production cycle of operation;

(m) further information if any specified by the director.

(5) If the information described in subsection (4) is included in the management plan for an aquaculture licence under the *Fisheries Act*, the management plan may be submitted as the application to register under subsection (3).

(6) The manager may give written notice to a person within 30 days of receipt of an application from the person requiring that the application be revised to conform to the requirements of this regulation.

(7) Registration under this section takes effect on the later of

(a) the date the application is received by the manager, or

(b) if written notice is given under subsection (6), the date the manager is satisfied with the revisions to the application.

(8) An operator must, within 30 days of changes to the information submitted under subsection (4), submit revised information to the manager in the form and manner required by subsection (4) for

(a) a change in information described in subsection (4) (a) to (g),

(b) a change of 20% or more to parameters described in subsection (4) (i) or (j), and

(c) a change of 20% or more to volume of containment structures described in subsection (4) (k).

[am. B.C. Reg. 321/2004, s. 10 (d) to (f).]

Production cycle standards for sites with soft bottoms

4

(1) Subject to section 11 (2), the mean free sulphide concentration at a facility sampling station on a soft bottom at or beyond 30 metres from the zero metre station must not be statistically significantly greater than 6 000 micromolar.

(2) Subject to section 11 (2),

(a) the mean taxon richness at a facility sampling station on a soft bottom at or beyond the tenure perimeter must not be statistically significantly different than the mean reference or baseline taxon richness, and

(b) the mean total abundance at a facility sampling station on a soft bottom at or beyond the tenure perimeter must not be statistically significantly different than the mean reference or baseline total abundance.

[am. B.C. Reg. 321/2004, s. 10 (g).]

Chemical trigger for sites with soft bottoms

5
Subject to section 11 (2), if at a facility sampling station on a soft bottom at or beyond the tenure perimeter the mean free sulphide concentration is statistically significantly greater than the mean reference or baseline sulphide concentration, the operator must

(a) conduct biological monitoring in accordance with section 9 (3) and (4), and

(b) comply with the pre-stocking requirement in section 6 (3).

[am. B.C. Reg. 321/2004, s. 10 (g).]

Pre-stocking requirements for sites with soft bottoms

6
(1) Subject to section 11 (2), if at a facility sampling station on a soft bottom at or beyond 30 metres from the zero metre station the mean free sulphide concentration is statistically significantly greater than

(a) 1 300 micromolar, and

(b) the mean reference or baseline sulphide concentration,

and does not exceed the standard in section 4 (1), the operator must not stock the facility until the mean sulphide concentration at each of these stations is not statistically significantly greater than

(c) 1 300 micromolar, or

(d) the mean reference or baseline sulphide concentration.

(2) Subject to section 11 (2), if at a facility sampling station on a soft bottom at or beyond 30 metres from the zero metre station the mean free sulphide concentration exceeds the standard in section 4 (1), the operator must not stock the facility until the following criteria are met:

(a) the mean free sulphide concentration at each sampling station located at the perimeter of the containment structure is not statistically significantly greater than 1 300 micromolar or statistically significantly greater than the mean reference or baseline sulphide concentration;

(b) biological samples are obtained, analyzed and reported from each sampling station in accordance with section 9 (3) and (4).

(3) Subject to section 11 (2), if at a facility sampling station on a soft bottom at or beyond the tenure perimeter the mean free sulphide concentration exceeds the trigger in section 5, the operator must not stock the facility until the mean free sulphide concentration at each station located at the tenure perimeter is not statistically significantly greater than the mean reference or baseline sulphide concentration.

[am. B.C. Reg. 321/2004, s. 10 (h).]

Domestic sewage

7 An operator must ensure that domestic sewage produced from the facility complies with the following requirements:

(a) the sewage discharge is exempted under section 2 of B.C. Reg. 129/99, the Municipal Sewage Regulation;

(b) the following apply:

(i) the maximum daily discharge rate does not exceed 2.5 m3/day;

(ii) the domestic sewage is treated by

(A) a septic tank designed with a retention time of not less than 2 days prior to discharge, or

(B) a device other than a septic tank with the concentration of total suspended solids in the effluent not exceeding 130 mg/L;

(iii) the location of the sewage discharge point to the environment is at a depth no less than 15 metres below the surface of the water;

(iv) all records related to the construction, operation and maintenance of sewage treatment and disposal works are retained for inspection by a director or an officer.

[am. B.C. Reg. 321/2004, s. 10 (f), (i) and (j).]

Best management practices plan

8

(1) An operator must implement a Best Management Practices Plan for the operation and maintenance of the facility consistent with the following objectives:

(a) compliance with the requirements in sections 5 and 6 and the standards in section 4;

(b) continual reduction of the discharge or potential discharge of the number and quantity of wastes and pollutants;

(c) management of potentially harmful materials including therapeutants, therapeutic additives, anaesthetics, disinfectants, pesticides, wood preservatives, antifouling agents, bloodwater and net-cleaning wastes and wastewater to preclude spillage to the environment, and capacity to respond appropriately in the event of a spill;

(d) continual improvement in the feed conversion ratio for feed fed to finfish;

(e) prevention of the spillage of feed into the environment outside the containment structures;

(f) prevention of the attraction and access of wildlife to feed, foodstuffs and mortalities;

(g) prevention of access to containment structures by wildlife;

(h) collection of mortalities and their disposal in a timely fashion only as authorized under the Environmental Management Act using equipment and locations that

(i) preclude spillage to the environment, and

(ii) minimize odours during storage and transportation;

(i) management in accordance with a fish kill contingency plan.

(2) The BMP must include the following:

(a) a description of specific management practices and standard operating procedures used to achieve the objectives in subsection (1);

(b) a finfish kill contingency plan;

(c) a statement that the BMP has been reviewed and endorsed by the operator and reviewed and understood by the individuals responsible for implementation of the plan.

(3) An operator must

(a) keep a copy of the BMP at the facility and make the plan available, on request, to a director or an officer, and

(b) amend the BMP whenever there is a change in the facility which materially increases the release or potential release to the environment of harmful materials referred to in subsection (1) (c).

(4) If a director provides a written opinion to the operator that a BMP is ineffective in achieving the objectives required by subsection (1), the operator must revise the BMP to ensure that the objectives are met.

[am. B.C. Reg. 321/2004, s. 10 (f), (k) and (l).]

Monitoring

9 (1) An operator must monitor the facility by

(a) surveys of hard bottoms, and

(b) sediment grab sampling of soft bottoms

at all sampling stations in accordance with Schedule B within 30 days of peak finfish biomass for each production cycle.

(2) If containment structures are relocated during a production cycle prior to conducting the monitoring required in subsection (1), the vacated site must be monitored in accordance with Schedule B within 30 days of relocating the containment structures.

(3) If the mean free sulphide concentration at a facility sampling station exceeds a level specified in section 4 or 5, the operator must repeat sulphide monitoring and undertake sediment biological sampling

(a) at least once within 30 days of the date on which the excess was measured,

(b) so that the repeat monitoring and biological sampling take place within 7 days of each other,

(c) at the same stations where the specified level was exceeded, and

(d) in accordance with Schedule B.

(4) An operator must conduct monitoring prior to stocking to confirm compliance with pre-stocking criteria in section 6 if any of the mean free sulphide concentration levels described in section 6 occur, as follows:

(a) if section 6 (1) applies, by conducting sulphide monitoring at the same stations where the specified sulphide level was exceeded;

(b) if section 6 (2) applies, by conducting

(i) sulphide monitoring at the sampling stations located at the perimeter of the containment structure, and at 30 metres from the zero metre station, and

(ii) biological monitoring at the sampling stations at 30 metres from the zero metre station,

which are on the same transects as the stations where the specified sulphide level was exceeded;

(c) if section 6 (3) applies, by conducting sulphide and biological monitoring at each station located at the tenure perimeter where the specified sulphide level was exceeded.

(5) If a containment structure is relocated back to a fallow footprint, the operator must conduct monitoring at the perimeter of the containment structure to confirm compliance with pre-stocking criteria in section 6 (2) (a) prior to stocking the containment

structure.

(6) An operator must have the biological samples that are collected under subsections (3) and (4) taxonomically identified to level of family by a taxonomist accredited to perform this analysis, or by another method approved by a director.

(7) Despite subsection (3) (a), an operator may apply to a director to vary the requirements of that subsection for one of the following reasons:

(a) weather conditions make it impractical to sample within 30 days of the sulphide levels specified in subsection (3) being exceeded;

(b) other legitimate reason for extending the sampling periods.

(8) The monitoring and sampling procedures must be designed and supervised by a qualified professional retained by the operator until a director gives written confirmation that the continuing supervision may be done by trained staff or a contractor.

(9) A supervisor referred to in subsection (8) must provide to the operator a report, signed and dated by the supervisor, containing the results of the monitoring and sampling done using the procedures under that subsection.

[am. B.C. Reg. 321/2004, s. 10 (e), (f) and (m).]

Reporting

10
(1) An operator must send to a director in a format acceptable to the director an email attachment containing an electronic version of the report required under section 9 (9).

(2) The report under subsection (1) must be submitted

(a) within 30 days of monitoring for physical and chemical parameters under section 9 (1),

(b) within 90 days of monitoring by surveys for hard bottoms under section 9 (1), and

(c) within 6 months of collecting samples submitted for taxonomic identification by an accredited laboratory, under section 9 (6), and within 14 days of receipt of the results from the taxonomist.

(3) Despite subsection (2), an operator must report to a director, within 14 days of obtaining monitoring results, if the standards or trigger in section 4 or 5 are exceeded.

(4) An operator must report by January 31 in every year the total dry weight and type of feed, including additives, used the previous calendar year.

(5) An operator must report by March 31 in every year the following for the previous calendar year:

(a) the names of all materials that are directly or indirectly released into the water during the reporting period, including therapeutants, pigments, hormones, pesticides, anaesthetics, antifouling agents, disinfectants, cleansers, therapeutic additives and zinc formulations;

(b) a summary of containment structure dimensions;

(c) the number of mortalities and disposal method used during the reporting period;

(d) a summary of monthly finfish biomass for each month during the reporting period.

(6) An operator must report fish kills to a director within 24 hours of invoking a fish kill contingency plan.

[am. B.C. Reg. 321/2004, s. 10 (f) and (n).]

Management changes and remediation for soft bottoms

11
(1) If the standards described in section 4 are exceeded, the operator must prepare and submit to a director within 30 days of becoming aware of the excess, and immediately thereafter implement, a remedial action plan which shows how the pre-stocking criteria in section 6 will be met and how deviations exceeding the standards will be avoided in future production cycles.

(2) Despite subsection (1), if containment structures are relocated within the same tenure and provided the footprint at the new location does not overlap the footprint at the previously stocked locations, the footprint of the previously stocked locations will be considered fallow and will be exempt with regards to determining compliance with sections 4 and 6 for the production cycles at the new location.

[am. B.C. Reg. 321/2004, s. 10 (f).]

Annual fees

12
(1) An operator must pay an annual fee by March 31 each year for each registration under section 3 that the operator holds for all or part of the preceding calendar year.

(2) For the purposes of calculating an annual fee under subsection (1), sections 1 and 3 and Schedule C of B.C. Reg. 299/92, the Permit Fee Regulation apply as though

(a) the operator was a permit holder, and

(b) the registration under section 3 was a permit.

(3) For the purposes of calculating the amounts of suspended solids, ammonia and nitrogen and nitrates discharged at a facility during a calendar year,

(a) **"suspended solids"**, **"ammonia"** and **"nitrogen and nitrates"** have the same meaning as in section 1 of B.C. Reg. 299/92, and

(b) each dry weight metric tonne of feed used at the facility, as reported under section 10 (4), in the calendar year shall be equated to an annual discharge at the facility of

(i) 186 kg of suspended solids,

(ii) 36 kg of ammonia, and

(iii) 8 kg of nitrogen and nitrates.

(4) Despite section 3 of B.C. Reg. 299/92, an annual fee under this section is only payable for the suspended solids, ammonia and nitrogen and nitrates calculated under subsection (3) for the facility for the portion of the preceding calendar year for which the facility was registered under section 3 of this regulation.

[am. B.C. Reg. 321/2004, s. 10 (o).]

Offences and penalties

13 (1) An operator must not knowingly

(a) make or participate in, authorize or acquiesce in the making of a false or deceptive statement in a document made or filed under this regulation, or

(b) omit or authorize, or acquiesce in the omission of entries required by this regulation to be included in a document made or filed under this regulation.

(2) Contravention of subsection (1) is an offence punishable by a fine not exceeding $100 000.

(3) An operator who contravenes section 3 (1), (2) or (8), 4, 5, 6, 7, 8 (3), 9 (1), (2), (3), (4), (5), (6), or (8), 10, 11 (1) or 12 commits an offence punishable by a fine not exceeding $200 000.

(4) Each day an offence under subsection (3) continues constitutes a separate offence.

Schedule A — Baseline Inventory

[am. B.C. Reg. 321/2004, s. 10 (p).]

Part I — Currents Metering

The following ocean currents metering information is required for registration.

The currents regime at the site must be characterized at 2 depths: approximately 15 metres below the surface and approximately 5 metres above the bottom. Current direction must be measured in degrees true and current speed in centimetres per second. Speed and direction must be recorded at least once every 30 minutes for a period of at least 30 days. The locations where currents are metered must represent currents within the tenure, especially near containment structures and containment structure arrays. Follow the protocols for collecting currents data that appear in Section 1 of Protocols for Marine Environmental Monitoring (WLAP 2002).

Part II — Baseline Monitoring

A. Seabed Characterization

A baseline survey of the seabed within the tenure and at at least 2 reference stations is required. The baseline survey must achieve the following objectives:

- describe variation in substrata, topography and bathymetry throughout the tenure and at reference stations
- locate reference stations with similar depths, substrata and other features
- determine the feasibility of collecting sediment grab samples and identify areas that need video survey for operational monitoring
- collect physical and biological data to compare with data collected during the operational period and to estimate the number of samples needed for operational monitoring.

Surveys of the probable footprints for all proposed locations of the containment structures, or containment structure arrays, are required. They must include enough transects to map all biophysical characteristics to a resolution of 50 metres. To describe depth variation, at least one transect must run perpendicular to the shore starting from the landward boundary of the tenure and running to its opposite perimeter.

B. Video Survey

Each reference station must have 2 video transects, each at least 100 metres long, including one perpendicular to shore. The transects must run straight, with start and end points recorded for future reference.

Surveys must characterize substratum types as bedrock, boulder (>256 millimetres in diameter), cobble (64-256 millimetres in diameter), gravel (2-64 millimetres in diameter), sand (0.0625-2 millimetres in diameter), silt, mud and clay (<0.0625 millimetres in diameter), or shell hash. For combination substrata, relative proportions must be noted (e.g. 50% bedrock: 50% boulder). Some will have associations of organisms or other features which must be identified.

In areas where sediment grab sampling is not possible, the abundances of megafauna, macrofauna and macrophytes must be measured. For megafauna, record moving images along transects. For macrofauna, take still images of quadrats. For macrophytes, use both. There must be enough quadrats to adequately represent each substratum type within all probable footprints. At reference stations, 5 quadrats must be sampled midway on the transects. All images, whether moving or still, must be clear enough for counting and measuring the biota cover. All biota must be taxonomically identified to at least the level of class.

Sediment colour and the presence or absence of fish feed, fish faeces, flocculent organic material, macrophytes, terrigenous material and

farm litter must also be recorded for each transect and quadrat. These observations are needed for proper comparison with observations made during operational monitoring. Unique seabed features or areas of interest must also be mapped.

The baseline survey must follow the protocols for video surveys in section 2 of Protocols for Marine Environmental Monitoring (WLAP 2002) unless an alternative method has been authorized by a director, and the alternative method will meet the objectives for the baseline survey set out at the beginning of this Part.

C. Sediment Sampling

Following conduct of the video or alternate survey, sediment grab sampling is required wherever physically possible.

Grab sampling obtains physical, chemical and biological data to be used to determine the number of samples needed for operational monitoring and to be compared against the operational data. Within each of the probable footprint or accumulated probable footprints a minimum of 3 grab samples must be taken for each sediment type and if only one sediment type is present, then a minimum of 5 grab samples must be taken. Two reference stations must be selected (as described for video surveys above) and at least 3 grabs must be taken at each reference station. Follow the sediment sampling protocols in Sections 3 and 4 of Protocols for Marine Environmental Monitoring (WLAP 2002).

The following physical and chemical parameters must be measured whenever a sediment grab sample is taken:

- free sulphides*
- redox potential*
- total volatile solids or total organic carbon
- sediment grain size (% gravel, sand, silt, mud and clay)
- total zinc (at sites where zinc is used in feed formulations)
- total copper (at sites where copper is used as an antifouling agent)
- other contaminants (if required by a director) such as pesticides, therapeutic additives, therapeutants, pharmaceuticals, wood preservatives and persistent organic compounds
- other parameters if required by a director.

* Follow the protocols for measuring free sulphides and redox potential in Sections 5 and 6 of Protocols for Marine Environmental Monitoring (WLAP 2002).

Record this additional information:

- sediment colour, odour and texture
- presence or absence of gas bubbles, Beggiatoa, fish feed, fish faeces, flocculent organic material, macrophytes, terrigenous material and farm litter.

Biota must be taxonomically identified to the level of species and counted. Also identify and count individuals of Capitella. After being processed, samples must be archived for at least 5 years. These samples must be properly stored and maintained.

Part III — Reporting

The location of each substratum type, currents metering, facility sampling stations, reference stations and transects must be reported on maps. Appropriate scale must be used for easy identification. Qualified professionals providing positional information must be aware that DGPS is not always available to adequate resolution (± 10 m) because of the topography of adjacent land or for other reasons. Therefore, alternative methods of positioning may be needed.

Another map must show depths across the tenure and at reference stations. Map contours must be at a maximum of 10-metre intervals (or equivalent intervals expressed in alternative units). Marine charts may be used, provided that they report the 10-metre depth interval

and are accurate for the specific site. However, companies may choose to collect their own bottom contour information if accurate charts are not available, or to be consistent with other information, such as a profile view of the facility.

Data submissions for currents metering (at both depths) must include:

- electronic files of the raw data, indicating current speed and direction for each sampling interval
- hard copies of the summary data presented in tabular frequency distribution.

The data must be provided in an electronic ASCII or MS Excel file format. The data must also be accompanied by adequate reporting information as indicated below. The hard-copy summaries must show current speed and current direction.

Both raw data and summary data must include measurements made between the first and the last good record time only. All data recorded before or after complete deployment of the meter must be removed prior to submission.

Videotape submissions must be accompanied by a detailed narrative or written assessment prepared by a qualified professional describing benthic conditions along transects and in quadrats. The video and report must identify the location of each transect and the location of the camera along each transect.

All physical, chemical and biological data gathered from video surveys and sediment sampling must be submitted in a standard electronic format. Spreadsheet templates, available from WLAP, are to be used for submitting these data and other information. Each data submission must be accompanied by a statement indicating that these Schedules and the Protocols for Marine Environmental Monitoring (WLAP 2002) were followed. If there are any deviations from these, there must also be a written statement justifying the deviations.

Schedule B — Operational Monitoring

[am. B.C. Reg. 321/2004, s. 10 (q) and (r).]

The main purposes of operational monitoring are to determine whether a facility meets chemical and biological requirements and standards, and to define the spatial and temporal extent of the facility's effects. All monitoring programs must have the basic study design features described in Section 7 and Appendices of Protocols for Marine Environmental Monitoring (WLAP 2002). Any additional design features must be provided by a qualified professional.

The probable footprint of the waste discharges must be determined prior to designing the impact study. Methods to estimate that footprint may include currents metering, video surveys, sonar techniques, reconnaissance grab sampling, hydrodynamic modeling or other methods.

Part I — Hard Bottom Survey

If satisfactory sediment samples cannot be obtained using grab samplers — because of hard surfaces, rocks or other coarse material — perform a video survey, or an alternative hard bottom survey if an alternative method is approved by a director, of the footprint or accumulated footprints. Have it analyzed by a qualified professional as described in Schedule A following the methods described in Section 2 of Protocols for Marine Environmental Monitoring (WLAP 2002).

For video surveys, the following 2 types of video surveys must be conducted:

Megafauna transect survey

This identifies and quantifies megafauna and macrophytes from moving images obtained along transects. These transects may also be used to define the extent of observable physical and biological changes, such as sediment colour, presence of organic sediments, feed pellets, farm litter or Beggiatoa mats.

Macrofauna quadrat survey

This consists of still images of quadrats used to identify and quantify macrofauna and macrophytes. These are normally on or adjacent to the megafauna transect.

Each transect must start at the perimeter of the containment structure, or containment structure array, and extend to the perimeter of the

tenure, along the prevailing current. There must be one transect for each of 2 dominant current directions of each containment structure or array. If adjacent containment structures, or arrays, are less than 60 m apart, they must be treated as if they were a single array when transects are positioned. A transect must not extend beneath an adjacent containment structure or array.

Alternate transect designs might be acceptable, provided that there is adequate supporting information to show that the transects represent the spatial extent and magnitude of effects, considering the tenure's currents regimes.

For each transect place at least 5 macrofauna quadrats at each of these stations: perimeter of containment structure or array, 30 metres from the zero metre stations and on the perimeter of the tenure.

At least 2 reference stations must be surveyed, with one transect at least 100 metres long at each. These must be the same reference stations as those surveyed during baseline inventory, or for existing sites, established for the Interim Monitoring Program 2000. In the absence of established sites documentation must be provided to show the reference sites meet the criteria in Section 2 B of Protocols for Marine Environmental Monitoring (WLAP 2002).

Data analyses must be performed according to the statistical protocols described in Section 7 of Protocols for Marine Environmental Monitoring (WLAP 2002) to determine whether the facility has had any statistically significant effects.

Part II — Sediment Sampling

Sediment sampling also requires a transect approach. Each transect must start at the perimeter of the containment structure, or containment structure array, and extend along the dominant currents to the perimeter of the tenure. There must be one transect for each of 2 dominant current directions for each containment structure or array. If adjacent containment structures, or arrays, are less than 60 m apart, they must be treated as if they were a single array when transects are positioned. A transect must not extend beneath an adjacent containment structure or array.

Each transect must have sampling stations located at the perimeter of the containment structure at 30 metres from the zero metre station and at the tenure perimeter. A zero metre station must be established for each transect. Each 30 metre station must be located along the dominant current using DGPS.

Alternate transect designs might be acceptable, provided that there is adequate supporting information to show that the transects represent the spatial extent and magnitude of effects, considering the tenure's currents regime(s). Two or more reference stations must be sampled at the same locations as those surveyed for baseline inventory, or for existing sites, established for the Interim Monitoring Program 2000. In the absence of established sites documentation must be provided to show the reference sites meet the criteria in Section 2 B of Protocols for Marine Environmental Monitoring (WLAP 2002).

The following physical and chemical parameters must be measured at the perimeter of containment structures, or of containment structure arrays and at reference stations during operational monitoring:

- free sulphides*
- redox potential*
- total volatile solids or total organic carbon
- sediment grain size (% gravel, sand, silt, mud or clay)
- total zinc (at sites where zinc is used in feed formulations)
- total copper (at sites where copper has been used as an antifouling agent)
- other contaminants (if required by a director) such as pesticides, therapeutic additives, therapeutants, pharmaceuticals, wood preservatives and persistent organic compounds
- other parameters if required by a director.

* There are specific protocols for measuring free sulphides and redox potential. Follow all sediment sampling protocols in Sections 3, 4, 5 and 6 of Protocols for Marine Environmental Monitoring (WLAP 2002).

Free sulphide and redox potential monitoring must be also conducted at stations at 30 metres from the zero metre station, and at the perimeter of the tenure.

A minimum of 3 grab samples must be taken at each station. If the mean free sulphide concentration of the 3 grabs at a given facility station exceeds a requirement or standard (not statistically), then 2 additional grabs must be taken for sulphides and redox potential.

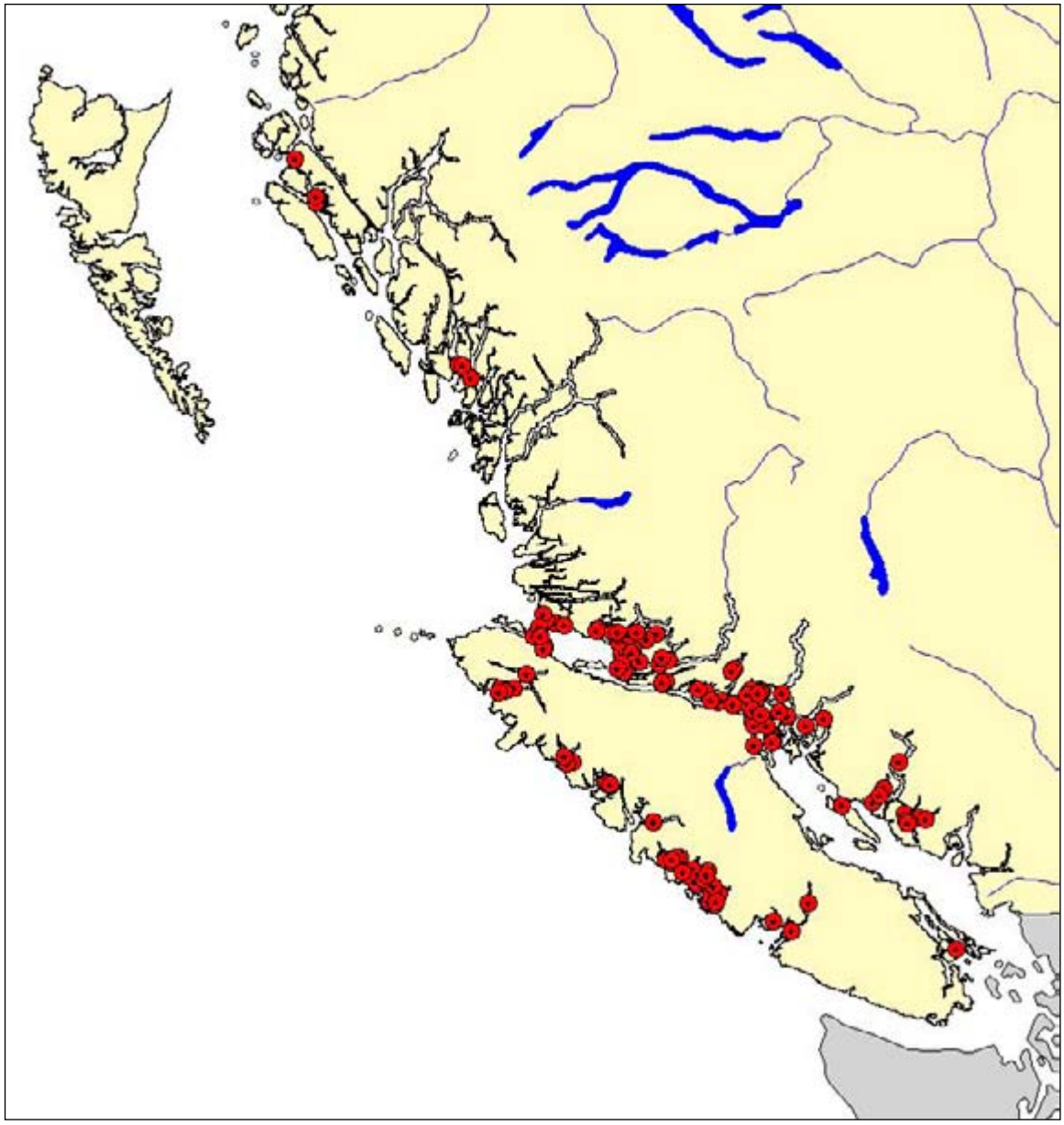
Where biological sediment samples are needed, the abundance of infauna and epifauna must be quantified. Within the tenure, at least 5 sediment grabs are needed for each station. At each reference station, at least 3 grabs are needed. Biota must be taxonomically identified to at least the level of family. Also identify individuals of Capitella. After processing, samples must be archived for at least 5 years. These samples need to be properly stored and maintained.

Perform data analyses according to the protocols described in Section 7 of Protocols for Marine Environmental Monitoring (WLAP 2002) to determine whether the facility has had any statistically significant effects.

Part III — Reporting

Reporting must be carried out in the same manner and to the same extent as set out in Part III of Schedule A.

Note: *this regulation replaces B.C. Reg. 470/88.*



Map of British Columbia showing distribution of marine based salmon farms.

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