SAI GLOBAL
ASSURANCE SERVICES

Aquaculture Stewardship Council

Salmon Standard

Final Assessment Report

Non-confidential issue

ASC Salmon Standard V1.0 June 2012

Marine Harvest Canada

1334 Island Highway, Campbell River, BC, V9W 8C9, Canada.

Marsh Bay Farm Site

Report Author: Paul Casburn
Company: SAI Global Assurance Service
Address: 3rd Floor Block 3
Quayside Business Park
Mill Street
Dundalk, Co. Louth
Ireland
Tel: +353 42 9320912 Fax: + 353 42 9386864
W: www.saiglobal.com

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Contents

1. Executive Summary

Marsh bay is located in Queen Charlotte Strait and the site is owned by Marine Harvest Canada. The fish currently in Marsh Bay originated from a division of a sister farm Shelter bay fish. Marine Harvest Canada has a number of hatchery sites of which three of them Dalrymple, Ocean falls are the hatcheries and Big tree the egg provider. Fish were stocked into Shelter bay from these three facilities in the spring of 2013. In January 2014 fish were split from Shelter bay into Marsh Bay thereby stocking the site to optimum levels for harvesting in September to November 2014.

Marine Harvest Canada was formed in 2007 and is the largest aquaculture company in British Columbia. Some of the sites under Marine Harvest control have been used for farming Atlantic Salmon since the 1980's.

The company employs more than 500 people and produces more than half, over 40,000 metric tonnes, of the farmed salmon exported from British Columbia each year. Around 200 employees are based in Campbell River were the majority of production and administrative functions are based.

There are 30-35 active marine sites throughout the year grouped into 5 managed production areas. Smolts are supplied by 6 Marine harvest freshwater sites. All feed is supplied by an approved feed supplier.

Finished product is processed by Marine Harvest processing units. The main markets for the finished products are Canada, United States and Asia.

There are many working partnerships with First Nations that also include business opportunities.

Marine Harvest Canada has an ethos in helping build strong communities through significant sponsorships, donations and supports community organizations including service groups, sports teams, social programs and salmon enhancement societies.

Water conservation is a high priority and the three MHC freshwater facilities included in the audit use recirculation technologies which have been adopted to reduce fresh water consumption by up to 95 percent.

The most modern available techniques are used at their hatcheries, farm sites and processing plants. The company is committed to achieving new certification under ASC and is also committed to achieving GAA BAP certification as is shown that the Port Hardy processing facility achieved BAP 3 star certification in July 2013.

2. Scope

2.1 Standard

Aquaculture Stewardship Council Salomon Standard Version 1.0 June 2012

2.2 Species produced

Salmo salar (Atlantic Salmon)

2.3 Client Details

Company Name:	Marine Harvest Canada
Address:	1334 Island Highway
City/State:	Campbell River
Province/Country:	British Columbia
Postal Code :	V9W 8C9
Application Status:	Single Site
Farm :	Marsh Bay
Farm Activity:	On growing of Atlantic salmon from smolt to harvest
Receiving Water :	Queen Charlotte Strait

3. Audit Plan

3.1 Previous Audits

This is the farms first audit under the ASC Salmon Standard V1.0 June 2012

3.2 Auditors

Paul Casburn, Auditor (Acting Lead Auditor)	Principle 1,2,3,4,5 and 8
Richard Cleathero, Lead Auditor	Principle 6 and 7

3.3 Audit Plan

The audit was conducted between the 24th April – 30th April 2014**.**

Day 1: Opening Meeting and visit to the farm site including principle 6 and 7

Day 2: Office based composed of principle 6 and 7

Day 3: Office based composed of review of Environmental Sustainability and Health & Safety, Food Safety, Regulations, Production Planning, Freshwater Production and a Closing Meeting.

3.4 Staff Interviews

Attendee (Name, Surname)	Role/Organization	Opening meeting	Document review	Site visit	Closing meeting
Paula Galloway	Certification Manager	✓	✓	✓	✓
Sharon Dedominicis	Environment sustainability manager	✓	✓		✓
Greg Gibson	Environmental assessment biol.		✓		✓
Diane Morrison	Vetinarian		✓		
Joy Stowe	Freshwater administration		✓		
Jason Stalker	Harvest Manager		✓		
Jean Veale	Food safety assurance tech.		✓		
Richard Opala	Regulatory affairs manager		✓		
Jason Fraser	Site manager Marsh Bay		✓	✓	

Interviews were conducted of a number of other Marine Harvest Canada employees both based in the office and at the farm site.

Interview with employees in respect of principle 6 were conducted in appropriate circumstances to ensure confidentiality and privacy.

3.5 Stakeholders submissions

Stakeholder submissions and SAI response is detailed in Appendix 2.

4. Findings

No.	Clause in Standard	Detail of Major Non-Conformity	Root Cause Analysis	Corrective Action Summary
1	2.1.2 C,E+I.	The sediment samples have not yet been collected.	Peak biomass has not yet been reached on this site. For Shelter Bay, peak biomass is projected for September/ October 2014.	Samples have been taken results provided to CAB for review and accepted. Status : Closed
2	2.1.3 B,C,D+E	The sediment samples have not yet been collected.	Peak biomass has not yet been reached on this site. For Shelter Bay, peak biomass is projected for September/ October 2014.	Samples have been taken results provided to CAB for review and accepted. Status : Closed

No.	Clause in Standard	Detail of Minor Non-Conformity	Root Cause Analysis	Corrective Action Summary
1	6.9.2 A	Disciplinary procedure does not explicitly state ' aim to improve the worker'.	MHC's Human Resources policy incorporates step-by-step actions to correct disciplinary issues, but does not include the specific wording required by the standard.	MHC's Human Resource department is aware of the non-conformity and is in the process of adding the standard's wording to the company policy. Status: To be Reviewed at First Surveillance.
2	7.1.1 E	Meeting minutes need to provide more detail as to what occurred during the meeting.	The community consultation report sheet included questions asked as well as indications and outcomes of any follow-up requirements, but did not include MHC specific responses to questions.	Additional information on responses during the meeting to Port Hardy town council will be included as addendum to report provided during audit. The community consultation sheet used for the initial meeting has been updated to include details of answers to questions and action items for follow-up. Status: To be Reviewed at First Surveillance.

5. Evaluation Results

5.1 PRINCIPLE 1: Comply With All Applicable National Laws and Local Regulations

Facility Number	Pacific Fishery Management Area	Pacific Fishery Management Sub-Area	Landfile Number	Licence Holder	Site Common Name	Total Peak Biomass or Total Max. Production Metric tonnes	Species
1351	12	13	1407749	Marine Harvest Canada Inc.	Marsh Bay, Stuart Rock N. of P. Hardy	3500	Atlantic Salmon (Salmo salar)

The aquaculture industry is overseen by a combination of federal and provincial authorities. The provincial government authorizes and maintains farm tenures. The federal government's *Pacific Aquaculture Regulations*, under the *Fisheries Act*, manage salmon farming in British Columbia. The federal government has jurisdiction over the regulation of fish products marketed for export and interprovincial trade; the protection of commercial, recreational and Aboriginal fisheries; and research and development. DFO is responsible for the application of the *Fisheries Act*, and Transport Canada grants authorizations for aquaculture facility plans under the *Navigation Protection Act*. The safety and quality of aquaculture products, feeds and veterinary drugs used by the industry are governed by other departments, including Health Canada, Agriculture and Agri-Food Canada, and the Canadian Food Inspection Agency.

There is satisfactory compliance with this principle and all licences were available for inspection.

5.2 PRINCIPLE 2: Conserve Natural Habitat, Local Biodiversity and Ecosystem Function

Marsh Bay licencing requirements on benthic free sulphide levels are compliant. For the ASC standard the peak biomass levels have not yet been reached and therefore the samples have not been taken in order to assess Sulphide levels and macro faunal taxa. This resulted in two major non-conformances. As a modelling tool Marine harvest Canada use DEPOMOD which was developed in Scotland by the Scottish Environmental Protection agency (SEPA) and has been accepted by DFO as a valid modelling tool. For recording all farm data concerning growth, feed, mortalities and day to day activities the 'Aqua Farmer' database is used. For recording oxygen on the site, there has been a new AKVA system installed. This is backed up using hand held oxyguard meters. For a period of time late in the year the site experiences low oxygen recordings where even the reference sites do not reach the recommended threshold of the standard. In this case there is an exemption allowed due to the low reference values. The Canadian Council of Ministers for the Environment (CCME) set the regional coastal water targets. Living Oceans provide maps of the Marine protected areas in the Port hardy, Vancouver Island and British Columbia area. The DFO also publish maps showing the Rockfish no take protected area in the Vancouver Island area. Mammal deaths must be reported to DFO for publication on their website. Accidental deaths or using lethality are covered by this requirement.
In Marsh bay two Californian sea-lions were killed by legal lethal action on the 14th April 2012. In May 2012 on the same site there was one other Californian sea-lion death when the animal became entangled in the predator net. Both these incidents were reported and posted on-line. All nets, both predator and containment, have been replaced using Sapphire nets instead of nylon. These nets are

made from HDPE and have reduced the number of predator attacks and there have been zero entanglements. Marine Harvest Canada intends to use these nets on all sites in the future.

In general the compliance with this principle is good except for the two majors due to not having carried out peak biomass sampling for sulphide or having the macro faunal indices carried out. This was a timing issue with the audit versus the time of peak biomass.

5.3 PRINCIPLE 3: Protect the Health and Genetic Integrity Of Wild Populations

DFO are responsible for setting the Area Bay Management definitions. There are 3 Atlantic salmon farm companies in the Vancouver River area and they are Grieg, Cermaq and Marine harvest. They work together on common issues under the BC salmon farmer's organisation and they have a viral management plan which is audited for compliance using 3rd party certification. MHC has funded post-doctoral research that WWF Canada has acknowledged. The regional trigger level for lice treatments is 3 motile lice and counts are posted on the web site. There was one minor non-conformance due to the posting of a result being outside the ASC allowable time of 8 weeks. MHC is going to use a new webmaster that will speed up resultant public notifications on lice levels.

MHC have submitted a notification in respect of Indicator 3.1.7. The level of adult lice with eggs on the 28th 6/13 was 0.176 exceeding the 0.1 level for the one and only time that year. However when the counts and numbers are averaged the level is below 0.1. MHC is part of the Global Salmon initiative who is working with ASC to look at these levels and how they are interpreted. ASC have replied in an e-mail via the CAB on this issue. This was the only time in 2013 where Marsh Bay exceeded the 0.1 level on an individual count basis.

The first introduction of Atlantic salmon to BC was in 1905 for angling purposes and in 1985 the first eggs were brought in from Scotland for farming purposes. MHC has a declaration on not using GM or Transgenic fish. There have been no escapes in 2012, 2013 or 2014. There was a 5.5% unexplained difference in the previous production cohort but this has been explained by the large number of predator attacks and the variance in counting due to a 2% +/- error allowed in the counting machines. All sites have an escape plan and escape drills are conducted at least annually using the escape kit located on the site. This is a documented drill.

In general compliance against principle 3 is good except for that one minor non-conformance on reporting. Full details can be found in the checklist.

5.4 PRINCIPLE 4: Use Resources in an Environmentally Efficient And Responsible Manner

MHC use only one source of fish feed and that is supplied by an approved feed supplier that has GAA BAP certification that includes traceability and chain of custody elements. GAA (BAP) and ASC have an MOU on exploring duplication reduction in their standards. Skretting are compliant on the fish oil forage fish dependency ratio and the fish meal fish dependency ratio. Skretting is working with fishsource.org on the score for Mexican anchoveta and this species is listed as of least concern and stable on the IUCN list. No Soya is used in the making of the salmon feed.

MHC has a Material, Storage and Waste Disposal Plan. All feed packaging and pallets are recycled through the feed company. Energy assessments are carried out on all aspects of the company's activities. Records are comprehensive and detailed. The assessment tool used to convert energy to Greenhouse gas emissions was developed by DEFRA, the Department of environment food and rural affairs in the UK. Confinement nets are washed in situ and no copper antifoulant is used. The company is using new nets made of HDPE heavy duty twine and are much stronger and more rigid that the old nylon nets.

5.5 PRINCIPLE 5: Manage Disease and Parasites in An Environmentally Responsible Manner

There is a full fish health management plan for the entire Marine harvest Canada organisation and it covers freshwater as well as marine sites. The FHMP refers to the OIE code in appendix 1.There has been no exceptional mortality event. All staff has been trained to assign reason for mortality when examining mortalities. There is a backup lab in Campbell River where the fish health team is located. The Aqua farmer database is used to record all inputs including feed usage, growth, fish, numbers and mortalities. There have been no viruses detected. MHC sets targets to reduce mortalities for all its sites. All therapeutant use is recorded. Full lists of antibiotics and chemicals used are available. There is also a medicine positive list. MHC no longer uses Tribrissen. The current PTI for Shelter bay was 3.2. Antibiotic use on Shelter bay amounted to 3 treatments for these fish prior the splitting of the fish into Marsh bay. There has been no antibiotic treatment on the Marsh Bay site. As there has been no further treatment of the Marsh Bay split the PTI for these fish is also 3.2. All customers of the finished product get a Supplier's Quality Assurance certificate once per year. No customers to date have submitted requests for residues results. Other treatments used are Emamectin benzoate (SLICE) and trials have been conducted for Hydrogen peroxide. Both these treatments are for lice. Site fallow periods are recorded.

VHS was detected in the past prior to being made a notifiable disease but not since. If a notifiable disease is detected then the DFO and CFIA take over the management of the disease and sites. There is only one suspected unidentifiable transmissible agent in the locality and that is Piscine Reo Virus (PRV) which has been tentatively been linked to Heart and Skeletal muscle inflammation disease in Europe, however HSMI disease has not been reported to exist in British Columbia. Any issue arising from a disease event is reported to the DFO as required by the licence within 24 hours. CFIA would also be informed. For notifiable diseases CFIA place mortality numbers on their website. If any unidentifiable transmissible agent causes a mass mortality it is MHC's intention to place those findings on their website. There have been no unidentifiable diseases or mass mortalities recorded for Marine Harvest Canada.

5.6 PRINCIPLE 6: Develop and Operate Farms In A Socially Responsible Manner

The workers are aware that they can join trade unions but there are no TU members at the farms audited. There are Trade unions active at other facilities operated by Marine Harvest Canada. Interviews with the workers confirmed that they are free to form organizations or join unions to protect their rights. Workers felt there was good communication with the management which lead to a good working environment and felt there was no need to be part of an organization.

No evidence of Child Labour was identified during the audit, no young workers employed at present.

Marine Harvest Canada have a detailed policy for new & young workers, a young worker is classified as 15-26 years. No evidence of forced, bonded or compulsory labour was identified.

There is a discrimination policy that is communicated to all employees. All employees are tested on policies and procedures to ensure they have been read and understood. In interviews workers stated they had not experienced any discrimination.

There is evidence the Marine Harvest Canada have consulted with an external agency to set the levels for salaries. This is then reviewed annually by Human Resources to ensure the levels are still acceptable. All workers receive a wage that is above the minimum wage and the living wage which has been calculated by Living Wage BC.

The workers are trained in health and safety and reviewed annually this is controlled on the DATS (Digital Action Training system). PPE are provided to and used by the workers. There is training on how to use the PPE and it is checked monthly to ensure it is fit for use. Health and Safety risk assessments are carried out and reviewed on an annual basis unless there has been a change and the assessment needs to be revised. Once the Risk assessment has been carried out a SWP (Safe Working Practice) or SOP (Standard Operating Procedure) is created and communicated to the workers and located near to the associated hazard for easy reference. All employees have been on Brain Safe course that trains workers how to identify hazards and how to report them. After the course employees are issued with a SLAAP booklet for reporting hazards when they are identified.

Any Accidents/incidents or near misses are logged and investigated with action plan implemented if required. The Workers are covered by a Work Safe BC policy should they be injured at work. All Diving is carried out by sub-contractors who are certified with copies verified. Diving operations are overseen by a Marine Harvest Employee.

Employment contracts are not a legal requirement in Canada, since 2011 Marine Harvest Canada have started implementing contracts for all new starters and are in the process of rolling out for all employees. All employees have contracts at Marsh Bay.

There was no evidence of labour only contracting or false apprenticeship schemes. In contracts with suppliers and subcontractors there is a defined requirement to follow the Marine Harvest Code of Conduct to ensure social compliance. The Company has a clear policy on conflict resolution, as part of the training process workers has to show they have read and understood company policies and procedures and this was confirmed during worker interviews. There was no evidence of grievances or complaints during the audit.

The Company has no incidences of excessive or abusive disciplinary actions. The disciplinary action policy is good but does not state that it aims to improve the worker, but the company also have a performance management program which is used to improve the worker but the there is no link to this in the disciplinary procedure.

All working hours are logged on Time Solutions System which allows workers and Management to monitor working hours. Workers live on site and work shifts 8 days on and 6 days off. Interviews confirmed that overtime is limited, voluntary and paid at premium rate. The Company encourages and supports education initiatives for all workers. This was confirmed in worker interviews and documented evidence of training and certificates all training is logged and recorded on DATS system.

The Company has demonstrated application and management of company level policies and procedures in line with the standard requirements under principle 6.

5.7 PRINCIPLE 7: Be a Good Neighbour and Conscientious Citizen

There is evidence of consultation with local and national communities and stakeholders.The company shows evidence that they respect the indigenous communities and have built good working relationships with agreements in place. There are many agreements in place with the First Nations some of these relate to use of land but some are also to support First Nation businesses that benefits all parties and shows that good relationships have been formed. All Communications are dealt with by the communications manager who keeps a detailed log of contact made with the First Nations.

CEAA Screening Report demonstrates that MHC does not have exclusive use of the locations where the farms are situated. There are no issues with access to resources this has been assessed within the report and there are no issues with farming activities at the sites. The report notes that the First Nation had been consulted in the process.

Local environmental organisation raised some concerns but the government has dealt with these by licensing and measures that have been put into place.

5.8 SECTION 8: Standards for Suppliers of Smolt

There are three freshwater facilities supplying Marsh bay. They are Dalrymple and Ocean falls, which are the hatcheries and Big tree facility which was the egg provider. Biological impact assessments have been conducted by contractor. The freshwater sites also use the Aqua farmer database system for recording growth parameters. Biomass is recorded. Phosphorus levels are recorded in feed, effluent and sludge. There have been no escapes. Vaki counters are used to count fish and they have a +/- 2% count error. Recycling of feed bags and packaging is the same as the marine sites. Energy use is recorded. Greenhouse gases are calculated and recorded. The freshwater facilities use the same fish health management plan as the marine sites and the fish health group are the same. Fish are regularly tested for pathogens and health issues. There is no freshwater antibiotic use. Smolts are vaccinated against furunculosis, Vibriosis and BKD. Marine Harvest Canada complies with the National Aquatic Animal Health Plan that can be found on the CFIA webpage. The same social and employment rules are applied to the freshwater sites as the marine sites. All effluent is monitored. Parameters such as oxygen, pH and temperature are also monitored. Macro invertebrate surveys are carried out by a consultant. This company determined that there is high species richness which indicates good water quality. Marine Harvest Canada has a bio solids management plan implemented. The sludge is removed by a contracted service.

6.0 Harvest and Chain of Custody:

Harvest generally takes place over a 2-3 month window. A Harvest (Refrigerated Salt water RSW) boat arrives at the site; the fish are seined to the side of the harvest boat and pumped aboard. There are 4 channels using a Bader automatic stun and bleed harvest machine. The fish are then chuted into one of the 4 RSW tanks. The temperature is set from -0.5 to -1 degree. Once the boat is full it makes its way to the Port Hardy facility where fish and blood water is unloaded for processing and treatment of the blood water. Following offloading the harvest boat is disinfected and the disinfection waters are also sent to the treatment plant adjacent to the harvest facility. The Port hardy processing plant maintains certification against the Best Aquaculture Practices Processing Standard

6.1 Traceability

The harvest manager allocates the harvest boat to the site one week in advance of harvest. The site managers, sales team, processors and harvest boats are included in the notification. There is a procedure in place for completing the finfish shipping forms – Marine sites (Drug treatment history form). It includes the site licence number, date of harvest, quantity shipped and name of processing plant. This is a legal document.

When the harvest arrives at the processing plant it's accompanied by the Drug treatment history form and a lot number is allocated to that harvest batch. The first three numbers of the lot number identify the farm. The following numbers are consecutive numbering and reference to the year. This lot number stays with the fish all the way to point of first sale. This system is approved by the CFIA and the FDA in the US.

6.2 Eligible operators and point(s) of landing

Marine Harvest Canada Port Hardy facility has BAP Processing Standard certification this has been in place since 2013. In compliance with the BAP requirements, which also require; product identification, separation, mass balance and traceability, the company initiated a procedure for separation of product for BAP certification. These same processes will be used to ensure chain of custody for ASC certified product. A copy of the procedure for completing the finfish shipping forms, a copy of a prescription, a section from the QMP on lot accountability and notification procedures and a list of all the MHC farm sites with their identification numbers were reviewed by the auditor.
The Port Hardy facility will require Marine Stewardship Chain of Custody Standard Certification.

6.3 Point from which Chain of Custody certification is required

Marine Harvest Canada integrated traceability system limits the risk of product substitution.

The Port Hardy facility will require Marine Stewardship Chain of Custody Standard Certification.

7. Certification Decision

SAI Global determines that the site Marine Harvest Canada Marsh Bay meets the requirements of the ASC Salmon Standard V1.0 June 2012 and is therefore certified.

Appendix 1 Detailed Findings

PRINCIPLE 1: Comply With All Applicable National Laws and Local Regulations		
Criterion 1.1 **Compliance with all applicable local and national legal requirements and regulations**		
1.1.1 Presence of documents demonstrating compliance with local and national regulations and requirements on land and water use		
A	Maintain digital or hard copies of applicable land and water use laws.	The PAR licence in Marsh bay is AQFF 108407 2013. Land file number is 1407749. There are 2 conditions to do with surveying Rockfish and Abalone.
B	Maintain original (or legalised copies of) lease agreements, land titles, or concession permit on file as applicable.	Navigable waters protection act. Licence of occupation. Forestry land and ministry of lands and natural resources licence number 1407749. Expiry 30/6/17.
C	Keep records of inspections for compliance with national and local laws and regulations (if such inspections are legally required in the country of operation).	Reviewed inspection records for compliance with national and local laws and regulations.
D	Obtain permits and maps showing that the farm does not conflict with national preservation areas.	DFO auditing and enforcement activities will confirm GPS co-ordinates, Lice monitoring fish health record, FHMP compliance, Benthic surveys and site debris. A full list is available on the DFO website.
1.1.2 Presence of documents demonstrating compliance with all tax laws		
A	Maintain records of tax payments to appropriate authorities (e.g. land use tax, water use tax, revenue tax). Note that CABs will not disclose confidential tax information unless client is required to or chooses to make it public.	Surveyor of taxes 2013 rural property tax demand dated 2/7/13 for Marsh bay was [redacted]. Registered as a fish farm facility.
B	Maintain copies of tax laws for jurisdiction(s) where company operates.	The farm is assessed for Tax rates on land use below the water. The footprint of the accommodation and the cages.
C	Register with national or local authorities as an “aquaculture activity".	The demand for taxes shows that MHC Campbell river is classed as a fish farmer of Atlantic salmon.

1.1.3 Presence of documents demonstrating compliance with all relevant national and local labor laws and regulations		
A	Maintain copies of national labor codes and laws applicable to farm (scope is restricted to the farm sites within the unit certification.)	The BC Employment Standards Act - this details minimum wages and rights for employees and collective agreements and bargaining. The Minister of Labour, Citizens Services and Open Government is the relevant Authority. The minimum wage is $10.25/hour and the minimum work age is 15.
B	Keep records of farm inspections for compliance with national labor laws and codes (only if such inspections are legally required in the country of operation).	NA - Inspections are not required in BC.
1.1.4 Presence of documents demonstrating compliance with regulations and permits concerning water quality impacts		
A	Obtain permits for water quality impacts where applicable.	There is no permit required to demonstrate requirements for water quality impacts for the marine sites in the licences required.
B	Compile list of and comply with all discharge laws or regulations.	There is a government database showing all the companies in Canada that discharge into the water discharge. Listed are the 3 hatcheries Ocean Falls, Big tree north and Dalrymple are listed showing permit or regulation numbers. The database can be accessed on www.gov.bc.ca
C	Maintain records of monitoring and compliance with discharge laws and regulations as required.	Section 8 of this audit confirms discharges for the hatcheries. There is no effluent for this farm site.
PRINCIPLE 2: Conserve Natural Habitat, Local Biodiversity and Ecosystem Function		
Criterion 2.1 **Benthic biodiversity and benthic effects [1]**		
2.1.1 Redox potential or [2] sulphide levels in sediment outside of the Allowable Zone of Effect (AZE) [3], following the sampling methodology outlined in Appendix I-1		
A	Prepare a map of the farm showing boundary of AZE (30 m) and GPS locations of all sediment collections stations. If the farm uses a site-specific AZE, provide justification [3] to the CAB.	Map of Marsh Bay with GPS co-ordinates with 8 benthic sampling stations. File reference number is 140749. The site is soft bottom and there is sulphide monitoring taking place.
B	If benthos throughout the full AZE is hard bottom, provide evidence to the CAB and request an exemption from 2.1.1c-f, 2.1.2 and 2.1.3.	The bottom is soft.

C	Inform the CAB whether the farm chose option #1 or option #2 to demonstrate compliance with the requirements of the Standard.	Option 2 has been chosen.
D	Collect sediment samples in accordance with the methodology in Appendix I-1 (i.e. at the time of peak cage biomass and at all required stations).	GPS co-ordinates for sampling stations in Marsh bay are provided showing co-ordinates of the sampling points. Copy is in the auditor documents. These stations are also submitted to the DFO.
E	For option #1, measure and record redox potential (mV) in sediment samples using an appropriate, nationally or internationally recognized testing method.	Option 2 has been chosen.
F	For option #2, measure and record sulphide concentration (uM) using an appropriate, nationally or internationally recognized testing method.	Marine Harvest Canada is not allowed to place fish into Marsh Bay site unless there is a valid licence, which there is. Letter from DFO instructing MHC that stocking can go ahead for Marsh Bay dated June 12th 2012 for Marsh Bay AQ 1315 from Kerra Hoyseth DFO.
G	Submit test results to ASC as per Appendix VI at least once for each production cycle. If site has hard bottom and cannot complete tests, report this to ASC.	As this is the first audit the farm has not yet reached peak biomass projected to occur in August or September 2014. Previous sulphide sampling on this site is included in the audit material showing compliance with DFO requirements on previous required sampling of previous year class.
2.1.2 Faunal index score indicating good [4] to high ecological quality in sediment outside the AZE, following the sampling methodology outlined in Appendix I-1		
A	Prepare a map showing the AZE (30 m or site specific) and sediment collections stations (see 2.1.1).	The same map showing the sampling points on the site as required by the PAR licence is in the audit material. The points are at 25 m and 125m . There has been a request sent into the CAB to allow these stations.
B	Inform the CAB whether the farm chose option #1, #2, #3, or #4 to demonstrate compliance with the requirement.	Option 2 has been chosen.
C	Collect sediment samples in accordance with Appendix I-1 (see 2.1.1).	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.
D	For option #1, measure, calculate and record AZTI Marine Biotic Index [5] score of sediment samples using the required method.	Option 2 has been chosen.
E	For option #2, measure, calculate and record Shannon-Wiener Index score of sediment samples using the required method.	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.

F	For option #3, measure, calculate and record Benthic Quality Index (BQI) score of sediment samples using the required method.	Option 2 has been chosen.
G	For option #4, measure, calculate and record Infaunal Trophic Index (ITI) score of sediment samples using the required method.	Option 2 has been chosen.
H	Retain documentary evidence to show how scores were obtained. If samples were analyzed and index calculated by an independent laboratory, obtain copies of results.	It is the intention to use an accredited third party consultant.
I	Submit faunal index scores to ASC (Appendix VI) at least once for each production cycle.	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.
2.1.3 Number of macrofaunal taxa in the sediment within the AZE, following the sampling methodology outlined in Appendix I-1		
A	Document appropriate sediment sample collection as for 2.1.1a and 2.1.1c, or exemption as per 2.1.1b.	GPS co-ordinates for sampling stations in Marsh bay are provided showing co-ordinates of the sampling points. Copy is in the auditor documents. These stations are also submitted to the DFO.
B	For sediment samples taken within the AZE, determine abundance and taxonomic composition of macrofauna using an appropriate testing method.	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.
C	Identify all highly abundant taxa [6] and specify which ones (if any) are pollution indicator species.	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.
D	Retain documentary evidence to show how taxa were identified and how counts were obtained. If samples were analyzed by an independent lab, obtain copies of results.	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.
E	Submit counts of macrofaunal taxa to ASC (Appendix VI) at least once for each production cycle.	The sediment samples have not yet been collected. Client is to supply the results once the sampling is completed during peak biomass.
2.1.4 Definition of a site-specific AZE based on a robust and credible [7] modelling system		
Note: Farms may define a site-specific AZE at any time before this date as long as they demonstrate full compliance by June 13, 2015.		
A	Undertake an analysis to determine the site-specific AZE and depositional pattern before 3 years have passed since publication of the	Marine Harvest uses the DEPAMOD modelling tool to determine the AXE. Marsh Bay was first modelled in June 2011 and further carried out in 2012. Model allows parameters can be

	Standard on June 13, 2012.	changed to reflect what's actually happening.
B	Maintain records to show how the analysis (in 2.1.4a) is robust and credible based on modelling using a multi-parameter approach [7].	DEPAMOD is used as the modelling tool.
C	Maintain records to show that modelling results for the site-specific AZE have been verified with > 6 months of monitoring data.	Will be starting to verify or ground truth at peak biomass and will be compliant by June 2015.
Criterion 2.2 **Water quality in and near the site of operation [12]**		
2.2.1 Weekly average percent saturation [13] of dissolved oxygen (DO) [14] on farm, calculated following methodology in Appendix I-4		
A	Monitor and record on-farm percent saturation of DO at a minimum of twice daily using a calibrated oxygen meter or equivalent method. For first audits, farm records must cover ≥ 6 months.	Aqua farmer production database is used to record these values.
B	Provide a written justification for any missed samples or deviations in sampling time.	Marsh Bay has a newly installed AKVA system for oxygen recording.
C	Calculate weekly average percent saturation based on data.	The records show that there was no sampling period that was below 70%.
D	If any weekly average DO values are < 70%, or approaching that level, monitor and record DO at a reference site and compare to on-farm levels (see Instructions).	All samples were above 70%.
E	Arrange for auditor to witness DO monitoring and calibration while on site.	There are 3 AKVA oxygen sensors on site calibrated every 6 months under contract by AKVA. There is a backup Oxyguard hand held probe. The staff are capable of calibrating it as required.
F	Submit results from monitoring of average weekly DO as per Appendix VI to ASC at least once per year.	These were submitted at the submission in April.
2.2.2 Definition of a site-specific AZE based on a robust and credible [7] modelling system		
A	Calculate the percentage of on-farm samples taken for 2.2.1a that fall under 2 mg/l DO.	There are no samples recorded below 2mg/l.

B	Submit results from 2.2.2a as per Appendix VI to ASC at least once per year.	These were submitted at the submission in April.
2.2.3 For jurisdictions that have national or regional coastal water quality targets [16], demonstration through third-party analysis that the farm is in an area recently [17] classified as having "good" or "very good" water quality		
A	Inform the CAB whether relevant targets and classification systems are applicable in the jurisdiction. If applicable, proceed to "2.2.3.b". If not applicable, take action as required under 2.2.4	The CCME, Canadian council for ministers of the environment set quality guidelines. The only parameter mentioned in seawater is Nitrate.
B	Compile a summary of relevant national or regional water quality targets and classifications, identifying the third-party responsible for the analysis and classification.	Third Party expert report from on water quality conditions of Coastal British Columbia reports the water in the area as considered to be as very good.
C	Identify the most recent classification of water quality for the area in which the farm operates.	Samples taken by DFO are sourced in the report from Third Party expert report.
2.2.4 For jurisdictions without national or regional coastal water quality targets, evidence of weekly monitoring of nitrogen and phosphorous [20] levels on farm and at a reference site, following methodology in Appendix I-5		
A	a. Develop, implement, and document a weekly monitoring plan for N, NH4, NO3, total P, and ortho-P in compliance with Appendix I-5, testing a minimum of once weekly in both locations. For first audits, farm records must cover ≥ 6 months.	As there are Nitrate levels used to determine water quality guidelines for the Marine area under the CCME this clause is not applicable.
B	b. Calibrate all equipment according to the manufacturer's recommendations.	As there are Nitrate levels used to determine water quality guidelines for the Marine area under the CCME this clause is not applicable.
C	c. Submit data on N and P to ASC as per Appendix VI at least once per year.	As there are Nitrate levels used to determine water quality guidelines for the Marine area under the CCME this clause is not applicable.
2.2.5 Demonstration of calculation of biochemical oxygen demand (BOD [21]) of the farm on a production cycle basis		
A	Collect data throughout the course of the production cycle and calculate BOD according to formula in the instruction box.	Calculations for BOD were checked and data examined included biomass and feed. The FCR was checked and the number matched. As the fish in Marsh bay have only been in this site since January 2014 the BOD calculation for the current cycle would not be applicable. The 2012 production cycle showed a BOD level of 3138971.1. The GAPI website was consulted.
B	Submit calculated BOD as per Appendix VI to ASC for each production cycle.	Submitted in April to ASC.

Criterion 2.3 **Nutrient release from production**		
2.3.1 Percentage of fines [22] in the feed at point of entry to the farm [23] (calculated following methodology in Appendix I-2)		
A	Determine and document a schedule and location for quarterly testing of feed. If testing prior to delivery to farm site, document rationale behind not testing on site.	The site manager has just started looking for fines using sieves. The ASC protocols are used.
B	If using a sieving machine, calibrate equipment according to manufacturer's recommendations.	Hand held sieves are used.
C	Conduct test according to detailed methodology in Appendix I-2 and record results for the pooled sample for each quarter. For first audits, farms must have test results from the last 3 months.	The sieves were only sourced in the past few weeks. There has only been one sieving test but all the pooled samples held on site for the past 3 months were sieved for fines.
Criterion 2.4 **Interaction with critical or sensitive habitats and species**		
2.4.1 Evidence of an assessment of the farm's potential impacts on biodiversity and nearby ecosystems that contains at a minimum the components outlined in Appendix I-3		
A	Perform (or contract to have performed) a documented assessment of the farm's potential impact on biodiversity and nearby ecosystems. The assessment must address all components outlined in Appendix I-3.	CEAA report on Application for Marsh bay licence. The start date for the Environmental Assessment was November 26th 2009.
B	If the assessment (2.4.1a) identifies potential impact(s) of the farm on biodiversity or nearby critical, sensitive or protected habitats or species, prepare plan to address those potential impacts.	The most recent screening report was put together by the DFO and the potential impacts have been addressed.
C	Keep records to show how the farm implements plan(s) from 2.4.1b to minimize potential impacts to critical or sensitive habitats and species.	Compensation Plan was proposed on the screening report. For Marsh Bay as there was no 5 g carbon footprint on the DEPAMOD there was no compensation required by DFO.
2.4.2 Allowance for the farm to be sited in a protected area [24] or High Conservation Value Areas [25] (HCVAs)		
A	Provide a map showing the location of the farm relative to nearby protected areas or High Conservation Value Areas (HCVAs) as defined above (see also 1.1.1a).	Map provided from 'Local environmental organisation' showing marine protected areas around British Columbia and Vancouver Island. The sites are not in a protected area. This is clearly shown. There is also a map showing the rockfish protection area on the BC coast and

		the farm is located within this zone of protection.
B	If the farm is not sited in a protected area or High Conservation Value Area as defined above, prepare a declaration attesting to this fact. In this case, the requirements of 2.4.2c-d do not apply.	There is a declaration from Regulatory affairs manager sent by e-mail to the Quality Manager declaring that the farm is not sited in a protected area.
C	If the farm is sited in a protected area or HCVA, review the scope of applicability of Indicator 2.4.2 (see Instructions above) to determine if your farm is allowed an exception to the requirements. If yes, inform the CAB which exception (#1, #2, or #3) is allowed and provide supporting evidence.	There is a Rockfish no take zone or protected area where the farm is located. As part of the PAR licence conditions the farm must undertake a Rockfish survey annually which is submitted to the DFO. The Cab has been informed about option 2.
D	If the farm is sited in a protected area or HCVA and the exceptions provided for Indicator 2.4.2 do not apply, then the farm does not comply with the requirement and is ineligible for ASC certification.	Farm is not in a protected area; however there is a Rockfish or Abalone no take zone where the farm is located.
Criterion 2.5 **Interaction with wildlife, including predators [27]**		
2.5.1 Number of days in the production cycle when acoustic deterrent devices (ADDs) or acoustic harassment devices (AHDs) were used		
A	Prepare a written statement affirming that the farm's management is committed to eliminate all usage of acoustic deterrent devices (ADDs) or acoustic harassment devices (AHDs) by June 13, 2015.	The PAR licence prohibits the use of ADD's. Found in section 11.2 page 17 prohibits their use.
B	Compile documentary evidence to show that no ADDs or AHDs were used by the farm after June 13, 2015 (applicable only after the specified date).	Prohibited use under the PAR licence.
C	-	Prohibited use under the PAR licence.
2.5.2 Prior to the achievement of 2.5.1, if ADDs or AHDs are used, maximum percentage of days [29] in the production cycle that the devices are operational		
A	Maintain a log for the use of any ADDs or AHDs on farm that includes recording the number of days (24-hour cycles) during which the devices were used.	Prohibited use under the PAR licence.

B	Calculate the percentage of days in the production cycle that the devices were operational in the most recent complete production cycle.	Prohibited use under the PAR licence.
C	-	Prohibited use under the PAR licence.
D	Submit data on number of days that ADDs/AHDs were used to the ASC as per Appendix VI. Data must be sent to ASC on an ongoing basis (i.e. at least once per year and for each production cycle).	Prohibited use under the PAR licence.
2.5.3 Number of mortalities [30] of endangered or red-listed [31] marine mammals or birds on the farm		
A	Prepare a list of all predator control devices and their locations.	No lethal predator control devices are used. MHC have switched to the HDPE nets manufactured in India with an electrified wire one Ft. above the water line. There is a DFO web page showing all the farm sites in BC and the lethal deaths of Mammals. In the last 2 years there have been no deaths recorded.
B	Maintain a record of all predator incidents.	Records reviewed in the Marine site activity log. There have been no incidents and no escapes.
C	Maintain a record of all mortalities of marine mammals and birds on the farm identifying the species, date, and apparent cause of death.	There have been no escapes. Fish on this site in this cycle since April.
D	Maintain an up-to-date list of endangered or red-listed marine mammals and birds in the area (see 2.4.1)	Wildlife interaction plan and there is a list of red listed animals on site. There are ID cards for cetaceans available.
E	-	There are no bird mortalities. Top nets used are now Saphire 2.75 inch.
2.5.4 Evidence that the following steps were taken prior to lethal action [32] against a predator: **1. All other avenues were pursued prior to using lethal action** **2. Approval was given from a senior manager above the farm manager** **3. Explicit permission was granted to take lethal action against the specific animal from the relevant regulatory authority**		
A	Provide a list of all lethal actions that the farm took against predators during the previous 12-month period. Note: "lethal action" is an action taken to deliberately kill an animal, including marine mammals and birds.	No lethal actions in the past year.

B	For each lethal action identified in 2.5.4a, keep record of the following: 1) a rationale showing how the farm pursued all other reasonable avenues prior to using lethal action; 2) approval from a senior manager above the farm manager of the lethal action; 3) where applicable, explicit permission was granted by the relevant regulatory authority to take lethal action against the animal.	No lethal actions in the past year.
C	Provide documentary evidence that steps 1-3 above (in 2.5.4b) were taken prior to killing the animal. If human safety was endangered and urgent action necessary, provide documentary evidence as outlined in [33].	No lethal actions in the past year.
2.5.5 Evidence that information about any lethal incidents [35] on the farm has been made easily publicly available [34]		
A	For all lethal actions (see 2.5.4), keep records showing that the farm made the information available within 30 days of occurrence.	DFO log and display all lethal actions on their website but there have been none on this site and only 2 grey seals recorded on one site in the whole of the BC farming area.
B	For all lethal actions (see 2.5.4), keep records showing that the farm made the information available within 30 days of occurrence.	There have been no lethal actions in the past 2 years. The last lethal action took place in Marsh Bay in April 14th 2012 where 2 California sea lions were authorised for lethal action under the PAR licence.
C	Ensure that information about all lethal actions listed in 2.5.5a are made easily publicly available (e.g. on a website).	There have been no lethal actions in the past 2 years though DFO publish all data including zero mortality reports. The last lethal action on April 14th 2012 was reported to DFO and logged on the website.
2.5.6 Maximum number of lethal incidents [35] on the farm over the prior two years		
A	Maintain log of lethal incidents (see 2.5.4a) for a minimum of two years. For first audit, > 6 months of data are required.	Log maintained on the Marine Activity sheet including observations of wildlife. There was one accidental lethal incident reported for Marsh Bay for May 2012 when a Californian sea lion became entangled in the predator net. There is a log on the DFO website and a paper log of a 'Marine Mammal incident report form' on file. The nets have now been replaced with more efficient and less likely to entangle Sapphire nets mentioned further in this audit.
B	Calculate the total number of lethal incidents and the number of incidents involving marine mammals during the previous two year period.	The only lethal incident recorded was the one entanglement of the Californian sea lion in 2.5.6 a.

C	Send ASC the farm's data for all lethal incidents [35] of any species other than the salmon being farmed (e.g. lethal incidents involving predators such as birds or marine mammals). Data must be sent to ASC on an ongoing basis (i.e. at least once per year and for each production cycle).	MHC submitted to ASC that there was one accidental sea lion death in the past 2 years.
2.5.7 In the event of a lethal incident, evidence that an assessment of the risk of lethal incident(s) has been undertaken and demonstration of concrete steps taken by the farm to reduce the risk of future incidences		
A	Keep records showing that the farm undertakes an assessment of risk following each lethal incident and how those risk assessments are used to identify concrete steps the farm takes to reduce the risk of future incidents?	There was one accidental entanglement in May 2012. MHC has started changing the nets from traditional nylon knotless nets to using Sapphire knotless HDPE nets. There are 3 nets on the cages comprising of top bird nets, fish retaining nets and outside predator nets. All are sapphire and are so rigid, tight and of a twine thickness that will significantly reduce the possibility of entanglement of birds or mammals.
B	Provide documentary evidence that the farm implements those steps identified in 2.5.7a to reduce the risk of future lethal incidents.	The farm has introduced new HDPE Sapphire nets and electric fences just above the water line to deter mammals. Documented logs confirm no recent incidents. Auditor visited the farm sites and inspected the nets insitu.
PRINCIPLE 3: Protect the Health And Genetic Integrity Of Wild Populations		
Criterion 3.1 **Introduced or amplified parasites and pathogens [38,39]**		
3.1.1 Participation in an Area-Based Management (ABM) scheme for managing disease and resistance to treatments that includes coordination of stocking, fallowing, therapeutic treatments and information-sharing. Detailed requirements are in Appendix II-1.		
A	Keep record of farm's participation in an ABM scheme.	Viral management plan in place between all 3 local companies Cermaq, Grieq and MHC. This is audited by Global Trust. IHN is the viral worry. Last outbreak was 2012 but not on MHC. Farms were de-populated. All the MHC fish are vaccinated for IHN. In this area of Shelter bay there are only MHC farms in the immediate area. The nearest non MHC sites are about 20 kilometres away.
B	Submit to the CAB a description of how the ABM (3.1.1a) coordinates management of disease and resistance to treatments, including: - coordination of stocking; - fallowing; - therapeutic treatments; and - information sharing.	There is no requirement under DFO for a single company to manage an area for fallowing, Treatments etc. However there is an element of this done within the company.

C	Provide the CAB access to documentation which is sufficient for the auditor to evaluate the ABM's compliance with all requirements in Appendix II-1, including definition of area, minimum % participation in the scheme, components, and coordination requirements.	There is no ABM in this area and all the immediate sites are belonging to Marine Harvest.
D	Submit dates of fallowing period(s) as per Appendix VI to ASC at least once per year.	ASC have been informed.
3.1.2 A demonstrated commitment [40] to collaborate with NGOs, academics and governments on areas of mutually agreed research to measure possible impacts on wild stocks		
A	Retain records to show how the farm and/or its operating company has communicated with external groups (NGOs, academics, governments) to agree on and collaborate towards areas of research to measure impacts on wild stocks, including records of requests for research support and collaboration and responses to those requests.	There is a letter on file dated March 2013 from WWF Canada to do with a post-doctoral research project called 'Advancing the science and management of cumulative Impacts'. This letter thanks Marine harvest for funding the project and lays out the term of agreement.
B	Provide non-financial support to research activities in 3.1.2a by either: - providing researchers with access to farm-level data; - granting researchers direct access to farm sites; or - facilitating research activities in some equivalent way.	Proof of funding from Marine harvest to the WWF Canada for post-doctoral research in the form of thank you letter from Darcy Dobell.
C	When the farm and/or its operating company denies a request to collaborate on a research project, ensure that there is a written justification for rejecting the proposal.	There have been no rejected requests on collaboration know off. MHC usually enters into dialogue on a partnership basis and moves forward with joint goals. Groups that have been joined in collaboration include WWF, DUC and BAMP external research, Centre of Aquatic research. Skretting feed and pigmentation levels for internal research. Website of Aquarium of the pacific has information on research and collaboration for MHC.
D	Maintain records from research collaborations (e.g. communications with researchers) to show that the farm has supported the research activities identified in 3.1.2a.	Records are on www.bamp.ca and include papers produced.
3.1.3 Establishment and annual review of a maximum sea lice load for the entire ABM and for the individual farm as outlined in Appendix II-2		
A	Keep records to show that a maximum sea lice load has been set for: - the entire ABM; and - the individual farm.	Under the farms licence conditions there is a trigger level of 3 motile lice from March to June following bi-weekly monitoring. For the rest of the year the tests shall be carried out every 4 weeks.

B	Maintain evidence that the established maximum sea lice load (3.1.3a) is reviewed annually as outlined in Appendix II-2, incorporating feedback from the monitoring of wild salmon where applicable (See 3.1.6).	The DFO will audit the farm and may result in re-training for staff on counting or if outward migration times will trigger treatments. DFO are informed immediately. Annual review takes place for annual licence review.
C	Provide the CAB access to documentation which is sufficient for the auditor to evaluate whether the ABM has set (3.1.3a) and annually reviewed (3.1.3.b) maximum sea lice load in compliance with requirements in Appendix II-2.	Production levels and sea lice load is monitored by company and DFO.
D	Submit the maximum sea lice load for the ABM to ASC as per Appendix VI at least once per year.	The regulation was submitted which report the limits set at <3.

3.1.4 Frequent [41] on-farm testing for sea lice, with test results made easily publicly available [42] within seven days of testing		
A	Prepare an annual schedule for testing sea lice that identifies timeframes of routine testing frequency (at a minimum, monthly) and for high-frequency testing (weekly) due to sensitive periods for wild Salmonids (e.g. during and immediately prior to outmigration of juveniles).	The farm check for lice as per the licence requirements but the farm does more counts than required and the current counts are posted on the website. Currently the counts are carried out weekly.
B	Maintain records of results of on-farm testing for sea lice. If farm deviates from schedule due to weather [41] maintain documentation of event and rationale.	Reviewed and confirmed the counts conducted by the farm.
C	Document the methodology used for testing sea lice ('testing' includes both counting and identifying sea lice). The method must follow national or international norms; follows accepted minimum sample size, use random sampling, and record the species and life-stage of the sea lice. If farm uses a closed production system and would like to use an alternate method (i.e. video), farm shall provide the CAB with details on the method and efficacy of the method.	There is a document called Sea lice monitoring - Marine sites SW 822 April 2012 describing the SOP for lice monitoring in MHC and the sites have ID charts.
D	Make the testing results from 3.1.4b easily publicly available (e.g. posted to the company's website) within seven days of testing. If requested, provide stakeholders access to hardcopies of test results.	Posted on the website for the most recent counts and is carried out by Fish health department.

E	Keep records of when and where test results were made public.	MHC does its best to comply with the 7 day rule and for the submission on the 13th of April the tests were logged to the website on the 17th April. MHC is in the process of getting its own webserver that will speed up the process.
F	Submit test results to ASC (Appendix VI) at least once per year.	All the website records for Marsh bay have been submitted.
3.1.5 In areas with wild Salmonids [43], evidence of data [44] and the farm's understanding of that data, around Salmonids migration routes, migration timing and stock productivity in major waterways within 50 kilometres of the farm		
A	a. Identify all Salmonids species that naturally occur within 75 km of the farm through literature search or by consulting with a reputable authority. If the farm is not in an area with wild Salmonids, then 3.1.5b and c do not apply.	All five species of Pacific Salmon occur in the area and there is a list on the DFO website.
B	b. For species listed in 3.1.5a, compile best available information on migration routes, migration timing (range of months for juvenile outmigration and returning salmon), life history timing for coastal resident Salmonids, and stock productivity over time in major waterways within 50 km of the farm.	BC salmon farmers post a map showing all the active salmon farms from all companies during the migration time. There is a paper available from 'Open Access' called Spatio-Temporal migration patterns of Pacific Salmon smolts in Rivers and coastal marine waters. Melnychuk et al.
C	c. From data in 3.1.5b, identify any sensitive periods for wild Salmonids (e.g. periods of outmigration of juveniles) within 50 km of the farm.	DFO control lice testing and call for more testing during the smolt migration. . Out migration of the smallest and; therefore, most vulnerable species establish this outmigration period.
D	-	MHC staff demonstrated knowledge of fish movements.
3.1.6 In areas of wild Salmonids, monitoring of sea lice levels on wild out-migrating salmon juveniles or on coastal sea trout or Arctic char, with results made publicly available. See requirements in Appendix III-1.		
A	Inform the CAB if the farm operates in an area of wild Salmonids. If not, then Indicator 3.1.6 does not apply.	The company has informed the CAB that they operate in a wild Salmonids area.
B	Keep records to show the farm participates in monitoring of sea lice on wild Salmonids.	MHC monitoring the outmigration fish in the Goletas channel of Port hardy. The first nations are involved and Pacificus. This has been taking place for a number of years.
C	Provide the CAB access to documentation which is sufficient for the auditor to evaluate whether the methodology used for monitoring of sea lice on wild Salmonids is in compliance with the requirements in	See 3.1.6.b

	Appendix III-1.	
D	Make the results from 3.1.6b easily publicly available (e.g. posted to the company's website) within eight weeks of completion of monitoring.	During the monitoring survey for wild lice carried out in June and July 2013 there was no production of fish in the Marsh bay site as the current stock was not split from the Shelter bay site. Fish were only split and stocked from Shelter bay in January 2014. The relevant survey was carried out for Shelter bay.
E	Submit to ASC the results from monitoring of sea lice levels on wild Salmonids as per Appendix VI.	Full report was not sent but the Results / Raw data was submitted. The report is available on the MHC website.

3.1.7 In areas of wild Salmonids, maximum on-farm lice levels during sensitive periods for wild fish [45]. See detailed requirements in Appendix II, subsection 2.		
A	Inform the CAB if the farm operates in an area of wild Salmonids. If not, then Indicator 3.1.7 does not apply.	The sites do operate in areas of wild Salmonids.
B	Establish the sensitive periods [45] of wild Salmonids in the area where the farm operates. Sensitive periods for migrating Salmonids is during juvenile outmigration and approximately one month before.	Sensitive period as per the farm licence and trigger levels for lice are from March 1 to June 30th inclusive. Pacific aquaculture regulation 7.3
C	Maintain detailed records of monitoring on-farm lice levels (see 3.1.4) during sensitive periods as per Appendix II-2.	MHC has submitted a Notification in respect of Indicator 3.1.7. MHC is part of the Global Salmon initiative who is working with ASC to look at these levels. ASC have replied in an e-mail via the CAB on this issue. There have been lice counts in Marsh bay since January 30th 2014, just after the fish were split from Shelter bay. The counts have been compliant up to now with levels below the threshold of the standard at 0.1 mature female lice.
D	Provide the CAB with evidence there is a 'feedback loop' between the targets for on-farm lice levels and the results of monitoring of lice levels on wild Salmonids (Appendix II-2).	There is only one year of data on wild monitoring of lice levels. As the database grows and the wild monitoring becomes a better tool this will create the feedback loop required. Results on the sampling have been made available to the CAB.
Criterion 3.2 **Introduction of non-native species**		
3.2.1 If a non-native species is being produced, demonstration that the species was widely commercially produced in the area by the date of publication of the SAD standard		

A	a. Inform the CAB if the farm produces a non-native species. If not, then Indicator 3.2.1 does not apply.	Marine Harvest Canada farm Atlantic Salmon *Salmo salar* on this site.
B	b. Provide documentary evidence that the non-native species was widely commercially produced in the area before publication of the SAD Standard (i.e. before June 13, 2012).	According to the Fisheries and Oceans Canada website Atlantic salmon were first farmed in British Columbia in the 1980's. There are reports of Atlantic Salmon being introduced for angling purposes back as early as 1874 to California and 1905 to British Columbia.
C	c. If the farm cannot provide evidence for 3.2.1b, provide documentary evidence that the farm uses only 100% sterile fish that includes details on accuracy of sterility effectiveness.	The DFO website shows that the first importation of salmon eggs for farming came from Scotland in 1985 when 130,000 eggs were imported. All egg imports are logged on the website as public reporting on Aquaculture.
D	d. If the farm cannot provide evidence for 3.2.1b or 3.2.1c, provide documented evidence that the production system is closed to the natural environment and for each of the following: 1) non-native species are separated from wild fish by effective physical barriers that are in place and well maintained; 2) barriers ensure there are no escapes of reared fish specimens that might survive and subsequently reproduce [47]; and 3) barriers ensure there are no escapes of biological material [47] that might survive and subsequently reproduce (e.g. UV or other effective treatment of any effluent water exiting the system to the natural environment).	Evidence for 3.2.1 b and c provided.
E	-	Evidence for 3.2.1 b and c provided.
3.2.2 If a non-native species is being produced, evidence of scientific research [48] completed within the past five years that investigates the risk of establishment of the species within the farm's jurisdiction and these results submitted to ASC for review [49]		
A	Inform the ASC of the species in production (Appendix VI).	ASC have been informed that the fish farmed are Atlantic salmon.
B	Inform the CAB if the farm produces a non-native species. If not, then Indicator 3.2.2 does not apply.	CAB has been informed that the fish farmed are Atlantic salmon.

C	If yes to 3.2.2b, provide evidence of scientific research completed within the past five years that investigates the risk of establishment of the species within the farm's jurisdiction. Alternatively, the farm may request an exemption to 3.2.2c (see below).	On the DFO website there is an exotic alert for Atlantic salmon with an id chart and telephone number for reporting. There is monitoring of the rivers by DFO on the makeup and abundance of species present on rivers in the area. From 1990 to 2004 there was an Atlantic Salmon Watch program run by DFO to look at potential interactions of Atlantic salmon in the area. MHC also under took independent surveys in 2010 following an escape. There have been no indications of the establishment of the species in this area. MHC will submit a report during the five years of the SAD publication.
D	If applicable, submit to the CAB a request for exemption that shows how the farm meets all three conditions specified in instruction box above.	None
E	Submit evidence from 3.2.2c to ASC for review.	Will be done before 2017.
Criterion 3.3 **Introduction of transgenic species**		
3.3.1 Use of transgenic [53] salmon by the farm.		
A	Prepare a declaration stating that the farm does not use transgenic salmon.	Dated 26th April 2013 there is a Global declaration on GM and Transgenic salmon and states that it will not be used unless the requirements are changed. The thrust of the declaration is that there is no use of Transgenics.
B	Maintain records for the origin of all cultured stocks including the supplier name address and contact person(s) for stock purchases.	DFO show the import of eggs over the years on their website. MHC has a policy of only sourcing eggs within their own Canadian company. Eggs and Broodstock origin is on the Aqua farmer database and was reviewed.
C	Ensure purchase documents confirm that the culture stock is not transgenic.	There are no purchases per say as the units are all under MHC's jurisdiction. There are official Blanket fish transfer licences for moving eggs from broodstock units to Hatcheries.
Criterion 3.4 **Escapes**		
3.4.1 Maximum number of escapees [56] in the most recent production cycle.		
A	Maintain monitoring records of all incidences of confirmed or suspected escapes, specifying date, cause, and estimated number of escapees.	On the DFO website all escapees are logged per year. There have been no escapes from 2012 or 2013. Last reported escape for MHC was 7 fish from 2012 from a dip net transfer.

B	Aggregate cumulative escapes in the most recent production cycle.	There have been no reported escapes in this most recent production cycle.
C	Maintain the monitoring records described in 3.4.1a for at least 10 years beginning with the production cycle for which farm is first applying for certification (necessary for farms to be eligible to apply for the exception noted in [57]).	For Marsh Bay the DFO website was investigated looking at escapes for the last production cycle during 2011. There were no reported escapes from Marsh bay. The inventory difference in percent from input to harvest was [redacted] fish. The VAKI counters have a count error of up to 2%.
D	If an escape episode occurs (i.e. an incident where > 300 fish escaped), the farm may request a rare exception to the Standard [57]. Requests must provide a full account of the episode and must document how the farm could not have predicted the events that caused the escape episode.	There have been no reported escapes on the current cycle and the farm has installed new anti-predator and retaining nets reducing the take by predators.
E	Submit escape monitoring dataset to ASC as per Appendix VI on an ongoing basis (i.e. at least once per year and for each production cycle).	It was submitted.
3.4.2 Estimated unexplained loss [59] of farmed salmon is made publicly available		
A	Maintain records of accuracy of the counting technology used by the farm at times of stocking and harvest. Records include copies of spec sheets for counting machines and common estimates of error for hand-counts.	The counters used are VAKI counters. Records are kept of counting accuracy on a freshwater production spreadsheet.
B	If counting takes place off site (e.g. pre-smolt vaccination count), obtain and maintain documents from the supplier showing the accuracy of the counting method used (as above).	The smolt suppliers are all MHC owned. Both off site and onsite counting takes place. There are 3 counts. Hatchery book count, Hatchery dispatch count and smolt input count.
C	During audits, arrange for the auditor to witness calibration of counting machines (if used by the farm).	Witnessed calibration not done as there was no well boat available on day of site visit. Protocols on calibration are used from the VAKI manual and followed by relevant staff. VAKI manuals can be accessed online at www.vaki.com
D	-	Spec sheet from VAKI stating an accuracy of 98-100%
3.4.3 Estimated unexplained loss [59] of farmed salmon is made publicly available		

A	Maintain detailed records for mortalities, stocking count, harvest count, and escapes (as per 3.4.1).	All records of mortalities are maintained and recorded both on the site and on the Aqua farmer database.
B	Calculate the estimated unexplained loss as described in the instructions (above) for the most recent full production cycle. For first audit, farm must demonstrate understanding of calculation and the requirement to disclose EUL after harvest of the current cycle.	This is the first audit and the farm keeps all records and intends to post final figures on the website following harvest in September / October this year.
C	Make the results from 3.4.3b available publicly. Keep records of when and where results were made public (e.g. date posted to a company website) for all production cycles.	It will be made public on their website.
D	Submit estimated unexplained loss to ASC as per Appendix VI for each production cycle.	This will be reported following harvest.
E	-	For the previous estimates there was a 1.4% difference. This is within the 2% error of the counting machine. There was no indication of escapes.
3.4.4 Evidence of escape prevention planning and related employee training, including: net strength testing; appropriate net mesh size; net traceability; system robustness; predator management; record keeping and reporting of risk events (e.g., holes, infrastructure issues, handling errors, reporting and follow up of escape events); and worker training on escape prevention and counting technologies		
A	Prepare an Escape Prevention Plan and submit it to the CAB before the first audit. This plan may be part of a more comprehensive farm planning document as long as it addresses all required elements of Indicator 3.4.4.	As part of the PAR licence (Pacific aquaculture regulation) there is an escape prevention plan. It was submitted pre-audit.
B	If the farm operates an open (net pen) system, ensure the plan (3.4.4a) covers the following areas: - net strength testing; - appropriate net mesh size; - net traceability; - system robustness; - predator management; - record keeping; - reporting risk events (e.g. holes, infrastructure issues, handling errors);	All areas covered. The staff at Marsh bay was questioned on the escape prevention plan and there is regular training for onsite staff in relation to implementing the escape prevention plan. The site has an escape prevention box with netting, needles, weights, ropes etc and once per year there is a mock escape drill documented. A blank quarterly emergency drill report is included in the evidence.

	- planning of staff training to cover all of the above areas; and - planning of staff training on escape prevention and counting technologies.	
C	If the farm operates a closed system, ensure the plan (3.4.4a) covers the following areas: - system robustness; - predator management; - record keeping; - reporting risk events (e.g. holes, infrastructure issues, handling errors); - planning of staff training to cover all of the above areas; and - planning of staff training on escape prevention and counting technologies.	Pen system is used.
D	Maintain records as specified in the plan.	Plan includes escape prevention kits and they were inspected on the site.
E	Train staff on escape prevention planning as per the farm's plan.	There was a farm drill on Escape prevention carried out in October and the staff signed to say they carried out this drill as part of training requirements.
F	-	Site manager was interviewed and questioned and the plan is implemented and there is an escape pack with netting, twine and needles available. Cameras that pan and tilt are in each cage with excellent resolutions monitor the behaviour of the fish.
PRINCIPLE 4: Use Resources In An Environmentally Efficient And Responsible Manner		
Criterion 4.1 **Traceability of raw materials in feed**		
4.1.1 Evidence of traceability, demonstrated by the feed producer, of feed ingredients that make up more than 1% of the feed [62].		
A	Maintain detailed records of all feed suppliers and purchases including contact information and purchase and delivery records.	The only supplier is [redacted]. The location of the production unit is in Richmond BC.

B	Inform each feed supplier in writing of ASC requirements pertaining to production of salmon feeds and send them a copy of the ASC Salmon Standard.	As well as informing [redacted] of MHC participation in ASC Skretting was part of the development of the standard.
C	For each feed producer used by the farm, confirm that an audit of the producer was recently done by an audit firm or CAB against an ASC-acknowledged certification scheme. Obtain a copy of the most recent audit report for each feed producer.	[redacted] has GAA BAP certification. Date of cert issued 6th October 2013. Valid till 22nd October 2014.
D	For each feed producer, determine whether the farm will use method #1 or method #2 (see Instructions above) to show compliance of feed producers. Inform the CAB in writing.	[redacted] has declared that they will be adopting method 2 for mass balance.
E	Obtain declaration from feed supplier(s) stating that the company can assure traceability of all feed ingredients that make up more than 1% of the feed to a level of detail required by the ASC Salmon Standard [62].	[redacted] assures traceability for all ingredients that makes up more than 1% of the feed. This is regularly verified with different certifications such as ISO 9001:2008, HACCP, BAP and [redacted] internal standard.
F	-	The company has the GAA BAP standard that insures traceability.
Criterion 4.2 **Use of wild fish for feed**		
[63] See Appendix VI for transparency requirements for 4.2.1 and 4.2.2.		
4.2.1 Fishmeal Forage Fish Dependency Ratio (FFDRm) for grow-out (calculated using formulas in Appendix IV- 1)		
A	Maintain a detailed inventory of the feed used as specified in 4.2.1a.	Yes
B	For FFDRo and EPA+DHA calculations (either option #1 or option #2), exclude fish oil derived from rendering of seafood by-products (e.g. the "trimmings" from a human consumption fishery.	The weighted average fishmeal inclusion is [redacted] excluding the meal from trimmings.
C	Inform the CAB whether the farm chose option #1 or option #2 to demonstrate compliance with the requirements of the Standard.	Option 1 was chosen.
D	For option #1, calculate FFDRo using formulas in Appendix IV-1 and using the eFCR calculated under 4.2.1c.	The calculation was done correctly.

E	For option #2, calculate amount of EPA + DHA using formulas in Appendix IV-2.	It has been submitted.
Criterion 4.3 Source of marine raw materials		
4.3.1 Timeframe for all fishmeal and fish oil used in feed to come from fisheries [65] certified under a scheme that is an ISEAL member [66] and has guidelines that specifically promote responsible environmental management of small pelagic fisheries		
A	Prepare a policy stating the company's support of efforts to shift feed manufacturers purchases of fishmeal and fish oil to fisheries certified under a scheme that is an ISEAL member and has guidelines that specifically promote responsible environmental management of small pelagic fisheries.	Marine Harvest International Policy on Sustainable salmon feed dated the 8/11/13 was reviewed and incorporates the intent of the criteria.
B	Prepare a letter stating the farm's intent to source feed containing fishmeal and fish oil originating from fisheries certified under the type of certification scheme noted in 4.3.1a	This policy is in force and active since November 2013.
C	Starting on or before June 13, 2017, use feed inventory and feed supplier declarations in 4.2.1a to develop a list of the origin of all fish products used as feed ingredients.	This is to be in place by 2017.
D	Starting on or before June 13, 2017, provide evidence that fishmeal and fish oil used in feed come from fisheries [65] certified under a scheme that is an ISEAL member [66] and has guidelines that specifically promote responsible environmental management of small pelagic fisheries.	This is to be in place by 2017.
4.3.2 Prior to achieving 4.3.1, the Fish Source score [68] for the fishery(ies) from which all marine raw material in feed is derived		
A	Record Fish Source score for each species from which fishmeal or fish oil was derived and used as a feed ingredient (all species listed in 4.2.1a).	[redacted] provided a table for the species and sources of fishmeal and fish oil and score from Fishsource.org. Geographical areas were also listed.
B	Confirm that each individual score ≥ 6 and the biomass score is ≥ 8.	The stock for Menhaden biomass on the supplied table is 10. This was confirmed following interaction with approved feed supplier.

C	If the species is not on the website it means that a Fish Source assessment is not available. Client can then take one or both of the following actions: 1. Contact Fish Source via Sustainable Fisheries Partnerships to identify the species as a priority for assessment. 2. Contract a qualified independent third party to conduct the assessment using the Fish Source methodology and provide the assessment and details on the third party qualifications to the CAB for review.	No independent assessment carried out.
D	-	On the table provided by feed supplier showing the fish source scores there were no scores available for Mexican anchoveta. There is an email on file from feed supplier showing that they have been in contact with fish source asking about the stock assessment but there currently has been no response. The last query email to fish source from feed supplier was dated 17/4/14.

4.3.3 Prior to achieving 4.3.1, demonstration of third-party verified chain of custody and traceability for the batches of fishmeal and fish oil which are in compliance with 4.3.2.		
A	Obtain from the feed supplier documentary evidence that the origin of all fishmeal and fish oil used in the feed is traceable via a third-party verified chain of custody or traceability program.	Feed supplier is certified under the BAP standard for feed mills. Valid until 22/10/2014.
B	Ensure evidence covers all the species used (as consistent with 4.3.2a, 4.2.1a, and 4.2.2a).	BAP require a verified chain of custody for compliance to their standard.
4.3.4 Feed containing fishmeal and/or fish oil originating from by-products [69] or trimmings from IUU [70] catch or from fish species that are categorized as vulnerable, endangered or critically endangered, according to the IUCN Red List of Threatened Species [71]		
A	Compile and maintain, consistent with 4.2.1a and 4.2.2a, a list of the fishery of origin for all fishmeal and fish oil originating from by-products and trimmings.	All species of fish used are listed and do not appear on the IUU list.

B	Obtain a declaration from the feed supplier stating that no fishmeal or fish oil originating from IUU catch was used to produce the feed.	Feed supplier has a signed declaration that there is no IUU species used. This is also a BAP requirement.
C	Obtain from the feed supplier declaration that the meal or oil did not originate from a species categorized as vulnerable, endangered or critically endangered, according to the IUCN Red List of Threatened Species [71] and explaining how they are able to demonstrate this (i.e. through other certification scheme or through their independent audit).	Feed supplier , under their sustainable procurement policy for Marine products version 2010 state under section 7 Criteria that the supplier needs to provide documentation that the meal and oil is IFFO RS or MSC certified.
D	If meal or oil originated from a species listed as "vulnerable" by IUCN, obtain documentary evidence to support the exception as outlined in [72].	Under section 7.2 of the feed supplier criteria for Marine raw materials it mentions Endangered or critically endangered but not vulnerable. Feed supplier have further provided a table showing that no vulnerable species are registered in their list of supplied raw material.
Criterion 4.4 **Source of non-marine raw materials in feed**		
4.4.1 Presence and evidence of a responsible sourcing policy for the feed manufacturer for feed ingredients that comply with recognized crop moratoriums [75] and local laws [76]		
A	Compile and maintain a list of all feed suppliers with contact information. (See also 4.1.1a)	Only one feed supplier feed is used by the Client.
B	Obtain from each feed manufacturer a copy of the manufacturer's responsible sourcing policy for feed ingredients showing how the company complies with recognized crop moratoriums and local laws.	A vendor policy is in place where all suppliers must sign applicable declarations guaranteeing source.
C	Confirm that third party audits of feed suppliers (4.1.1c) show evidence that supplier's responsible sourcing policies are implemented.	Feed supplier is BAP certified until October 2014. BAP have a similar principle which was provided to compare.
4.4.2 Evidence of disclosure to the buyer [79] of the salmon of inclusion of transgenic [80] plant raw material, or raw materials derived from transgenic plants, in the feed		
A	Prepare a policy stating the company's support of efforts to shift feed manufacturers' purchases of soya to soya certified under the Roundtable for Responsible Soy (RTRS) or equivalent.	Declaration on the Marine harvest Global Corporate documents called Marine harvest position on sustainable sources of non-marine raw materials in salmon feed signed dated 29/11/13. The document refers to the Roundtable for responsible soy (RTRS).
B	Prepare a letter stating the farm's intent to source feed containing soya certified under the RTRS (or equivalent)	This is company policy. See 4.4.2 a

C	Notify feed suppliers of the farm's intent (4.4.2b).	The company has informed supplier of the fact that they do not use any Soya. E-mail from confirming that Soya is not used. April 1 2014.
D	Obtain and maintain declaration from feed supplier(s) detailing the origin of soya in the feed.	No soya is used in the feed.
E	Starting on or before June 13, 2017, provide evidence that soya used in feed is certified by the Roundtable for Responsible Soy (RTRS) or equivalent [77]	This is company policy. See 4.4.2 a
4.4.3 Evidence of disclosure to the buyer [79] of the salmon of inclusion of transgenic [80] plant raw material, or raw materials derived from transgenic plants, in the feed		
A	Obtain from feed supplier(s) a declaration detailing the content of soya and other plant raw materials in feed and whether it is transgenic.	Declarations were supplied and were fully investigated. No use of GMO's are stated.
B	Disclose to the buyer(s) a list of any transgenic plant raw material in the feed and maintain documentary evidence of this disclosure. For first audits, farm records of disclosures must cover > 6 months.	Mail from Skretting stating that the feed includes Canola oil and Corn Gluten that are transgenic. Dated January 7 2014.
C	Inform ASC whether feed contains transgenic ingredients (yes or no) as per Appendix VI for each production cycle.	ASC have been informed.
Criterion 4.5 **Non-biological waste from production**		
4.5.1 Presence and evidence of a functioning policy for proper and responsible [83] treatment of non-biological waste from production (e.g., disposal and recycling)		
A	Prepare a policy stating the farm's commitment to proper and responsible treatment of non-biological waste from production. It must explain how the farm's policy is consistent with best practice in the area of operation.	Materials storage and waste disposal plan.
B	Prepare a declaration that the farm does not dump non-biological waste into the ocean.	Declaration is on the plan.
C	Provide a description of the most common production waste materials and how the farm ensures these waste materials are properly disposed of.	Waste is removed by the Feed delivery boat as the main waste is pallets and plastic from the feed.

D	Provide a description of the types of waste materials that are recycled by the farm.	The main recycling that takes place on the site is feed packaging materials such as plastic pallet wrap, Wodden pallets and used bulk feed bags.
4.5.2 Evidence that non-biological waste (including net pens) from grow-out site is either disposed of properly or recycled		
A	Provide a description of the most common production waste materials and how the farm ensures these waste materials are properly disposed of. (see also 4.5.1c)	Nets ropes and other production equipment are also included but would not occur as often as the packing materials. The company has a website for used equipment sales www.marineharvestusedsales.com. Disposal forms are used by the site managers when equipment is being de-commissioned and there is a column for describing what happens to the item i.e. sold, re-cycled or donated. Equipment is also donated to enhancement facilities.
B	Provide a description of the types of waste materials that are recycled by the farm. (See also 4.5.1d)	There was no evidence of waste build-up. Supplier email was looked at dated July 2013 referring to the waste feed bags and pallets. The recycling company used is DAR, Coquitlam BC. The Skretting contact was Frank Gnoato.
C	Inform the CAB of any infractions or fines for improper waste disposal received during the previous 12 months and corrective actions taken.	There were none.
D	Maintain records of disposal of waste materials including old nets and cage equipment.	Recycling through sales on the website of old materials nets etc. There is an asset disposal forms are kept as a record.
Criterion 4.6 Energy consumption and greenhouse gas emissions on farms [84]		
4.6.1 Presence of an energy use assessment verifying the energy consumption on the farm and representing the whole life cycle at sea, as outlined in Appendix V- 1		
A	Maintain records for energy consumption by source (fuel, electricity) on the farm throughout each production cycle.	There is a GHG Energy assessment Xl sheet used for Marsh bay. Items recorded include petrol, Diesel and gas (propane).
B	Calculate the farm's total energy consumption in kilojoules (kj) during the last production cycle.	[redacted] kJ.
C	Calculate the total weight of fish in metric tons (mt) produced during the last production cycle.	[redacted] tons.
D	Using results from 4.6.1b and 4.6.1c, calculate energy consumption on the farm as required, reported as kilojoule/mt fish/production cycle.	The farms energy consumption was [redacted] kJ per mT for the previous production cycle in Marsh Bay.

E	Submit results of energy use calculations (4.6.1d) to ASC as per Appendix VI for each production cycle.	They were submitted.
F	Ensure that the farm has undergone an energy use assessment that was done in compliance with requirements of Appendix V-1.	MHC has used a tool from MH Scotland to record and calculate the energy consumption. This diagnostic tool was developed by the Department of energy and climate change part of the UK's DEFRA government agency.
4.6.2 Records of greenhouse gas (GHG [85]) emissions [86] on farm and evidence of an annual GHG assessment, as outlined in Appendix V-1		
A	Maintain records of greenhouse gas emissions on the farm.	Records are maintained using the DEFRA diagnostic tool database.
B	At least annually, calculate all scope 1 and scope 2 GHG emissions in compliance with Appendix V-1.	There is no scope 2. Scope 1 emissions for 2013 were [redacted].
C	For GHG calculations, select the emission factors which are best suited to the farm's operation. Document the source of those emissions factors.	GHG Energy assessment sheet is where all factors are recorded.
D	For GHG calculations involving conversion of non-CO_2 gases to CO_2 equivalents, specify the Global Warming Potential (GWP) used and its source.	The original GHG calculations and the GWP conversions all originated from DEFRA in the UK where Scotland has been using these calculations for longer than Canada.
E	Submit results of GHG calculations (4.6.2d) to ASC as per Appendix VI at least once per year.	They were submitted in April.
F	Ensure that the farm undergoes a GHG assessment as outlined in Appendix V-1 at least annually.	This is done. 20971. This is low as there was no fish for 2013 and GHG emissions only occur due to setup.
4.6.3 Documentation of GHG emissions of the feed [87] used during the previous production cycle, as outlined in Appendix V, subsection 2		
A	Obtain from feed supplier(s) a declaration detailing the GHG emissions of the feed (per kg feed).	Communicated to the feed company all be available by June 2015.
B	Multiply the GHG emissions per unit feed by the total amount of feed from each supplier used in the most recent completed production cycle.	Will be done by June 2015.
C	If client has more than one feed supplier, calculate the total sum of emissions from feed by summing the GHG emissions of feed from each supplier.	Only feed supplier.

D	Submit GHG emissions of feed to ASC as per Appendix VI for each production cycle.	Submitted applicable after June 15.
Criterion 4.7 **Non-therapeutic chemical inputs**		
4.7.1 For farms that use copper-treated nets [91], evidence that nets are not cleaned [92] or treated in situ in the marine environment		
A	Prepare a farm procedure for net cleaning and treatment that describes techniques, technologies, use of off-site facilities, and record keeping.	The farm cleans its nets insitu using an IDEMA net washer.
B	Maintain records of antifoulant and other chemical treatments used on nets.	None are used.
C	Declare to the CAB whether copper-based treatments are used on nets.	None are used.
D	If copper-based treatments are used, maintain documentary evidence (see 4.7.1b) that farm policy and practice does not allow for heavy cleaning of copper-treated nets in situ.	None are used.
E	Inform ASC whether copper antifoulant are used on farm (yes or no) as per Appendix VI for each production cycle.	None are used.
4.7.2 For any farm that cleans nets at on-land sites, evidence that net-cleaning sites have effluent treatment [93]		
A	Declare to the CAB whether nets are cleaned on-land.	The company /facility used is Campbell River Netloft.
B	If nets are cleaned on-land, obtain documentary evidence from each net-cleaning facility that effluent treatment is in place.	According to e-mails received the company they do not have an effluent licence as they do not discharge. Solids are separated and the water is re-cycled back into the facility.
C	If yes to 4.7.2b, obtain evidence that effluent treatment used at the cleaning site is an appropriate technology to capture of copper in effluents.	All nets are being replaced with HDPE nets and no copper is used. The plan is to have these nets replaced on the entire MHC production area by end 2014.
4.7.3 For farms that use copper nets or copper-treated nets, evidence of testing for copper level in the sediment outside of the AZE, following methodology in Appendix I-1 Note: If the benthos throughout and immediately outside the full AZE is hard bottom, provide evidence to the CAB and request an exemption from Indicator 4.7.3 (see 2.1.1c).		
A	Declare to the CAB whether the farm uses copper nets or copper-treated nets. (See also 4.7.1c). If "no", Indicator 4.7.3 does not apply.	Copper treated nets are not used.

B	If "yes" in 4.7.3a, measure and record copper in sediment samples from the reference stations specified in 2.1.1d and 2.1.2c which lie outside the AZE.	Copper treated nets are not used.
C	If "yes" in 4.7.3a, maintain records of testing methods, equipment, and laboratories used to test copper level in sediments from 4.7.3b.	Copper treated nets are not used.
4.7.4 Evidence that copper levels [94] are < 34 mg Cu/kg dry sediment weight OR in instances where the Cu in the sediment exceeds 34 mg Cu/kg dry sediment weight, demonstration that the Cu concentration falls within the range of background concentrations as measured at three reference sites in the water body		
A	Inform the CAB whether: 1) farm is exempt from Indicator 4.7.4 (as per 4.7.3a), or 2) Farm has conducted testing of copper levels in sediment.	Cab was informed.
B	Provide evidence from measurements taken in 4.7.3b that copper levels are < 34 mg Cu/kg dry sediment weight.	Copper treated nets are not used.
C	If copper levels in 4.7.4b are ≥ 34 mg Cu/kg dry sediment weight, provide evidence the farm tested copper levels in sediments from reference sites as described in Appendix I-1 (also see Indicators 2.1.1 and 2.1.2).	Copper treated nets are not used.
D	Analyze results from 4.7.4c to show the background copper concentrations as measured at three reference sites in the water body.	Copper treated nets are not used.
E	Submit data on copper levels in sediments to ASC as per Appendix VI for each production cycle.	Copper treated nets are not used.
4.7.5 Evidence that the type of biocides used in net antifouling are approved according to legislation in the European Union, or the United States, or Australia		
A	Identify all biocides used by the farm in net antifouling.	None used.
B	Compile documentary evidence to show that each chemical used in 4.7.5a is approved according to legislation in one or more of the following jurisdictions: the European Union, the United States, or Australia.	None used.

PRINCIPLE 5: Manage Disease And Parasites In An Environmentally Responsible Manner		
Criterion 5.1 **Survival and health of farmed fish**		
5.1.1 Evidence of a fish health management plan for the identification and monitoring of fish diseases and parasites		
A	Prepare a fish health management plan that incorporates components related to identification and monitoring of fish disease and parasites. This plan may be part of a more comprehensive farm planning document.	Fish health management plan dated January 2014.
B	Ensure that the farm's current fish health management plan was reviewed and approved by the farm's designated veterinarian [96].	Approved by the company Vet on April 14th.

5.1.2 Site visits by a designated veterinarian [96] at least four times a year, and by a fish health manager [97] at least once a month		
A	Maintain records of visits by the designated veterinarian [96] and fish health managers [97]. If schedule cannot be met, a risk assessment must be provided.	The fish have only been on site since January. Vet visited the site in February. Other fish health professionals to visit from MHC in March. Aso carried out a pre fish visit in December.
B	Maintain a current list of personnel who are employed as the farm's designated veterinarian(s) [96] and fish health manager(s) [97].	Fish health and food safety director has DVM. Senior fish health technician and Fish health technician have BSc degrees.
C	Maintain records of the qualifications of persons identified in 5.1.2b.	Fish health and food safety director has DVM. Senior fish health technician and Fish health technician have BSc degrees.
5.1.3 Percentage of dead fish removed and disposed of in a responsible manner		
A	Maintain records of mortality removals to show that dead fish are removed regularly and disposed of in a responsible manner.	Mortality records were reviewed on site during the visit. This included each mort and its assigned cause. Marsh bay uses uplifts to remove morts daily. Total mortality numbers since January are [redacted]

B	Collect documentation to show that disposal methods are in line with practices recommended by fish health managers and/or relevant legal authorities.	Disposal is via a sealed mortality bin located away from the site. When it's full it's brought ashore to the port hardy facility where the morts are ensiled to a company called Foenix www.seasoil com and there are receipts for the transport of these morts to Foenix. Also another company recently started a service to render viscera and carcasses for the wild salmon industry that have trialled taking morts from MHC.
C	For any exceptional mortality event where dead fish were not collected for post-mortem analysis, keep a written justification.	There have been no exceptional mortality events.
5.1.4 Percentage of mortalities that are recorded, classified and receive a post-mortem analysis		
A	Maintain detailed records for all mortalities and post-mortem analyses including: - date of mortality and date of post-mortem analysis; - total number of mortalities and number receiving post-mortem analysis; - name of the person or lab conducting the post-mortem analyses; - qualifications of the individual (e.g. veterinarian [96], fish health manager [97]); - cause of mortality (specify disease or pathogen) where known; and - classification as 'unexplained' when cause of mortality is unknown (see 5.1.6).	The mortality records on the farm were reviewed along with the protocols for assigning cause of mortality. All the staff has been trained in assigning reasons for mortality. Unknown reasons or assigning disease must be referred to the fish health team.
B	For each mortality event, ensure that post-mortem analyses are done on a statistically relevant number of fish and keep a record of the results.	30 fish are generally sampled for fish health. There has been no mortality event.
C	If on-site diagnosis is inconclusive and disease is suspected or results are inconclusive over a 1-2 week period, ensure that fish are sent to an off-site laboratory for diagnosis and keep a record of the results (5.1.4a).	The off-site lab used is only when unknown mortalities need to be assessed. The lab is situated in Campbell river.
D	Using results from 5.1.3a-c classify each mortality event and keep a record of those classifications.	There has been no mortality event. Database from Fish health department reviewed.
E	Provide additional evidence to show how farm records in 5.1.4a-d cover all mortalities from the current and previous two production cycles (as needed).	There is the aqua farmer database recording mortalities. There was a former database called fish talk where some of these older records are available. The fish health department have a database on fish diagnostics.

F	Submit data on numbers and causes of mortalities to ASC as per Appendix VI on an ongoing basis (i.e. at least once per year and for each production cycle).	These numbers were submitted.
5.1.5 Maximum viral disease-related mortality [100] on farm during the most recent production cycle		
A	Calculate the total number of mortalities that were diagnosed (see 5.1.4) as being related to viral disease.	On the Aqua farmer database the mortalities attributed to viral death was zero for the current cycle.
B	Combine the results from 5.1.5a with the total number of unspecified and unexplained mortalities from the most recent complete production cycle. Divide this by the total number of fish produced in the production cycle (x100) to calculate percent maximum viral disease-related mortality.	This is not applicable as there were no attributable viral deaths. B + b contradict each other as do 5.1.5 and 5.1.6
C	Submit data on total mortality and viral disease-related mortality to ASC as per Appendix VI on an ongoing basis (i.e. at least once per year and for each production cycle).	Submitted to ASC.
5.1.6 Maximum unexplained mortality rate from each of the previous two production cycles, for farms with total mortality > 6%		
A	Use records in 5.1.4a to calculate the unexplained mortality rate (%) for the most recent full production cycle. If rate was ≤ 6%, then the requirement of 5.1.6 does not apply. If total mortality rate was > 6%, proceed to 5.1.6b.	For previous production cycle this was done.
B	Calculate the unexplained mortality rate (%) for each of the two production cycles immediately prior to the current cycle. For first audit, calculation must cover one full production cycle immediately prior to the current cycle.	The farm result was [redacted]%.
C	Submit data on maximum unexplained mortality to ASC as per Appendix VI for each production cycle.	Submitted to ASC previously in April.
5.1.7 A farm-specific mortalities reduction program that includes defined annual targets for reductions in mortalities and reductions in unexplained mortalities		

A	Use records in 5.1.4a to assemble a time-series dataset on farm-specific mortalities rates and unexplained mortality rates.	The company uses a spreadsheet to recorded monthly mortalities in both percentage terms for count and Biomass. In November 2013 there was a presentation given in the port hardy area, by the Production manager. The presentation covered improved production and reduced mortalities.
B	Use the data in 5.1.7a and advice from the veterinarian and/or fish health manager to develop a mortalities-reduction program that defines annual targets for reductions in total mortality and unexplained mortality.	Farm sets targets for each site and the targets are rolling. The farm sets harvest figures for each site which is the inverse of the mortalities targets.
C	Ensure that farm management communicates with the veterinarian, fish health manager, and staff about annual targets and planned actions to meet targets.	Staff were questioned on mortality recording and classification. Morts are recorded by staff members and then allocated a cause of death and recorded on the Aqua farmer system. Communication is good and targets to reduce mort numbers have improved thanks to better nets and electrical fences to deter predators.
Criterion 5.2 **Therapeutic treatments**		
[101] See Appendix VI for transparency requirements for 5.2.1, 5.2.5, 5.2.6 and 5.2.10.		
5.2.1 On-farm documentation that includes, at a minimum, detailed information on all chemicals [102] and therapeutants used during the most recent production cycle, the amounts used (including grams per ton of fish produced), the dates used, which group of fish were treated and against which diseases, proof of proper dosing, and all disease and pathogens detected on the site		
A	Maintain a detailed record of all chemical and therapeutant use that includes: - name of the veterinarian prescribing treatment; - product name and chemical name; - reason for use (specific disease) - date(s) of treatment; - amount (g) of product used; - dosage; - mt of fish treated; - the WHO classification of antibiotics (also see note under 5.2.8); and - the supplier of the chemical or therapeutant.	There was a list of all chemicals and therapeutans used, available in the onsite records. Records are well maintained and include the date used and the quantity used. Veterinarian sanction and prescriptions were also recorded. Aqua farmer also has the same records. The site supervisor records these records on the drug treatment log. The same person then enters the details into Aqua farmer which then becomes the official record for the site. Prescriptions are also recorded in the Fish health data base by the fish health group.
B	If not already available, assemble records of chemical and therapeutant use to address all points in 5.2.1a for the previous two production cycles. For first audits, available records must cover one full production	Records were inspected and cover the previous production cycle. This is the sites first audit.

	cycle immediately prior to the current cycle.	
C	Submit information on therapeutant use (data from 5.2.1a) to ASC as per Appendix VI on an ongoing basis (i.e. at least once per year and for each production cycle).	Submitted in April to ASC.
5.2.2 Allowance for use of therapeutic treatments that include antibiotics or chemicals that are banned [103] in any of the primary salmon producing or importing countries		
A	Prepare a list of therapeutants, including antibiotics and chemicals, that are proactively banned for use in food fish for the primary salmon producing and importing countries listed in [104].	Marine Harvest International has a list of all relevant companies that shows an extensive list of countries and their allowable and unallowable contaminants drugs and microbiology and statutory limits for fish for all these 3 areas. This data base is updated when a country changes its limits by anybody in the Marine harvest family that has the current information. Every possible worldwide therapeutant is listed. Marine Harvest Canada also has a medicine positive list showing drugs allowable however in the case of Tribrissen even though it's allowed MHC no longer uses it for the US market.
B	Maintain records of voluntary and/or mandatory chemical residue testing conducted or commissioned by the farm from the prior and current production cycles.	Following the use and a therapeutant the Aqua farmer system locks in place the withdrawal time.
C	-	Checked use logs and the therapeutans are on the approved list.
5.2.3 Percentage of medication events that are prescribed by a veterinarian		
A	Obtain prescription for all therapeutant use in advance of application from the farm veterinarian (or equivalent, see [96] for definition of veterinarian).	The farm has the original prescription located in the drug record file on site.
B	Maintain copies of all prescriptions and records of veterinarian responsible for all medication events. Records can be kept in conjunction with those for 5.2.1 and should be kept for the current and two prior production cycles.	Records are kept on site and on Aqua farmer.
5.2.4 Compliance with all withholding periods after treatments		
A	Incorporate withholding periods into the farm's fish health management plan (see 5.1.1a).	Referenced in section 2.10.1. SOP Document SW 123.

B	Compile and maintain documentation on legally-required withholding periods for all treatments used on-farm. Withholding period is the time interval after the withdrawal of a drug from the treatment of the salmon before the salmon can be harvested for use as food.	Health Canada website lists all drubs allowed for use in the culture of fish for food and includes details of withdrawal periods. http://www.hc-sc.gc.ca/dhp-mps/vet/legislation/pol/aquaculture_anim-eng.php
C	Show compliance with all withholding periods by providing treatment records (see 5.2.1a) and harvest dates for the most recent production cycle.	Harvest date was completed in April 16 2012. Harvest started in March.
5.2.5 Maximum farm level cumulative parasiticide treatment index (PTI) score as calculated according to the formula in Appendix VII		
A	Incorporate withholding periods into the farm's fish health management plan (see 5.1.1a).	There have been no treatments since the fish have been split to Marsh bay from Shelter bay.
B	Compile and maintain documentation on legally-required withholding periods for all treatments used on-farm. Withholding period is the time interval after the withdrawal of a drug from the treatment of the salmon before the salmon can be harvested for use as food.	The current PTI is 3.2 for the fish cohort but there have been no treatments since the split from Shelter bay in January 2014.
C	Show compliance with all withholding periods by providing treatment records (see 5.2.1a) and harvest dates for the most recent production cycle.	Submitted to ASC previously in April
5.2.6 For farms with a cumulative PTI ≥ 6 in the most recent production cycle, demonstration that parasiticide load [105] is at least 15% less that of the average of the two previous production cycles		
A	Review PTI scores from 5.2.5a to determine if cumulative PTI ≥ 6 in the most recent production cycle. If yes, proceed to 5.2.6b; if no, Indicator 5.2.6 does not apply.	PTI is below 6.
B	Using results from 5.2.5 and the weight of fish treated (kg), calculate parasiticide load in the most recent production cycle [105].	PTI is below 6.
C	Calculate parasiticide load in the two previous production cycles as above (5.2.6b) and compute the average. Calculate the percent difference in parasiticide load between current cycle and average of two previous cycles. For first audit, calculation must cover one full production cycle immediately prior to the current cycle.	PTI is below 6.

D	As applicable, submit data to ASC on parasiticide load for the most recent production cycle and the two previous production cycles (Appendix VI).	PTI is below 6.
5.2.7 Allowance for prophylactic use of antimicrobial treatments [106]		
A	Maintain records for all purchases of antibiotics (invoices, prescriptions) for the current and prior production cycles.	Prescriptions available and reviewed on site.
B	Maintain a detailed log of all medication-related events (see also 5.2.1a and 5.2.3)	Logs are present.
C	Calculate the total amount (g) and treatments (#) of antibiotics used during the current and prior production cycles (see also 5.2.9).	[redacted]g active ingredients and they tally with prescriptions.
5.2.8 Allowance for use of antibiotics listed as critically important for human medicine by the World Health Organization (WHO [107])		
A	Maintain a current version of the WHO list of antimicrobials critically and highly important for human health [107].	The company uses the WHO website on critically important antimicrobials for human medicine. Checked florfenicol use and it's classed as highly important and not of critical importance.
B	If the farm has not used any antibiotics listed as critically important (5.2.8a) in the current production cycle, inform the CAB and proceed to schedule the audit.	Florinfenicol used and it's listed as highly important and not critical.
C	If the farm has used antibiotics listed as critically important (5.2.8a) to treat any fish during the current production cycle, inform the CAB prior to scheduling audit.	No critically important antibiotics used.
D	If yes to 5.2.8c, request an exemption from the CAB to certify only a portion of the farm. Prior to the audit, provide the CAB with records sufficient to establish details of treatment, which pens were treated, and how the farm will ensure full traceability and separation of treated fish through and post- harvest.	No critically important antibiotics used.
5.2.9 Number of treatments [109] of antibiotics over the most recent production cycle		

A	Maintain records of all treatments of antibiotics (see 5.2.1a). For first audits, farm records must cover the current and immediately prior production cycles in a verifiable statement.	There have been 3 treatments for mouth Myxobacteria in May, June and July 2013. The company is aware that they have reached their limit. These treatments occurred on the shelter bay site. There have been no treatments on the Marsh bay site since the split. Previous prior production treatment records were available.
B	Calculate the total number of treatments of antibiotics over the most recent production cycle and supply a verifiable statement of this calculation.	It si </= to 3.
5.2.10 If more than one antibiotic treatment is used in the most recent production cycle, demonstration that the antibiotic load [110] is at least 15% less that of the average of the two previous production cycles		
A	Use results from 5.2.9b to show whether more than one antibiotic treatment was used in the most recent production cycle. If not, then the requirement of 5.2.10 does not apply. If yes, then proceed to 5.2.10b.	Not applicable at this time. Farms first audit.
B	Calculate antibiotic load (antibiotic load = the sum of the total amount of active ingredient of antibiotic used in kg) for most recent production cycle and for the two previous production cycles. For first audit, calculation must cover one full production cycle immediately prior to the current cycle.	Antibiotic was not used at Marsh bay but at Shelter Bay as the fish were split into Marsh in January. There has been no antibiotic use in Marsh Bay for the current cycle. For the previous cycle the active ingredient for Marsh bay was [redacted].
C	Provide the auditor with calculations showing that the antibiotic load of the most recent production cycle is at least 15% less than that of the average of the two previous production cycles.	Not applicable at this time. Farms first audit.
D	Submit data on antibiotic load to ASC as per Appendix VI (if applicable) for each production cycle.	Figures were submitted.
5.2.11 Presence of documents demonstrating that the farm has provided buyers [112] of its salmon a list of all therapeutants used in production		
A	Prepare a procedure which outlines how the farm provides buyers [112] of its salmon with a list of all therapeutants used in production (see 4.4.3b).	Once per year (January) MHC supply their customers with a 'Suppliers Quality Assurance Certificate'. It mentions potential treatments and refers the reader to web links with the Canadian Food inspection agency for regulatory status. It lists the possible supply plants. A list of the primary customers is also attached for the audit.
B	Maintain records showing the farm have informed all buyers of its salmon about all therapeutants used in production.	A list of the primary customers was provided for the audit. When sales of ASC product become available it will be possible to trace sales versus treatments as it is with all sales currently. On the bottom of the Suppliers QA certificate there is a statement providing contact name and numbers if more information is required

		there are any questions. There has been no customer requests for residue tests from MHC but MHC will provide them if required.
Criterion 5.3 **Resistance of parasites, viruses and bacteria to medicinal treatments**		
5.3.1 Bio-assay analysis to determine resistance when two applications of a treatment have not produced the expected effect		
A	In addition to recording all therapeutic treatments (5.2.1a), keep a record of all cases where the farm uses two successive medicinal treatments.	Medicinal treatments other than Antibiotics are Emmamectin (Slice). The company has been doing trials on Hydrogen peroxide and there is permission to use H2O2 in one production area but not where the proposed ASC sites are. All treatments are recorded in the treatment log.
B	Whenever the farm uses two successive treatments, keep records showing how the farm evaluates the observed effect of treatment against the expected effect of treatment.	There have been no antibiotic treatments in Marsh Bay. There has been Slice treatment.
C	For any result of 5.3.1b that did not produce the expected effect, ensure that a bio-assay analysis of resistance is conducted.	There was only one Slice treatment and it was effective.
D	Keep records of all results arising from 5.3.1c	Bioassays can be conducted in the internal lab if required.
5.3.2 When bio-assay tests determine resistance is forming, use of an alternative, permitted treatment, or an immediate harvest of all fish on the site		
A	Review results of bio-assay tests (5.3.1d) for evidence that resistance has formed. If yes, proceed to 5.3.2b. If no, then Indicator 5.3.2 is not applicable.	There is no evidence to suggest that resistance has been formed.
B	When bio-assay tests show evidence that resistance has formed, keep records showing that the farm took one of two actions: - used an alternative treatment (if permitted in the area of operation); or - immediately harvested all fish on site.	Romet thirty and Florinfenicol are the only two antibiotics that MHC uses in treatments. Trybrissin has been discontinued due to US markets and Oxytetracycline is only used for gram positive bacteria and the company is trying to get away from using it.
Criterion 5.4 **Biosecurity management**		
5.4.1 Evidence that all salmon on the site are a single-year class [114]		

A	Keep records of the start and end dates of periods when the site is fully fallow after harvest.	Records of all harvest and smolt inputs are kept on the Aqua farmer system. Date of fallow period for Shelter bay was 16/4/12 to 12/3/13. Date of input was March 2013. Verified on Aqua farmer.
B	Provide evidence of stocking dates (purchase receipts, delivery records) to show that there were no gaps > 6 months for smolt inputs for the current production cycle.	Fish were inspected. The fish size on the farm correspond with the Aqua farmer reported size of [redacted]kg.
C	-	Verified by inspection.
5.4.2 Evidence that if the farm suspects an unidentifiable transmissible agent, or if the farm experiences unexplained increased mortality, [116] the farm has: 1. Reported the issue to the ABM and to the appropriate regulatory authority 2. Increased monitoring and surveillance [117] on the farm and within the ABM 3. Promptly [118] made findings publicly		
A	For mortality events logged in 5.1.4a, show evidence that the farm promptly evaluated each to determine whether it was a statistically significant increase over background mortality rate on a monthly basis [116]. The accepted level of significance (for example, $p < 0.05$) should be agreed between farm and CAB.	Numbers are reviewed by the Fish health group. First review is on the farm that within 24 hours must contact the fish health group and is logged on the site activity log. There have been no unexplained mortality events
B	For mortality events logged in 5.1.4a, record whether the farm did or did not suspect (yes or no) an unidentified transmissible agent.	There were no large or unusual mortality events.
C	Proceed to 5.4.2d if, during the most recent production cycle, either: - results from 5.4.2a showed a statistically significant increase in unexplained mortalities; or - the answer to 5.4.2b was 'yes'. Otherwise, Indicator 5.4.2 is not applicable.	There were no large or unusual mortality events.
D	If required, ensure that the farm takes and records the following steps: 1) Report the issue to the ABM and to the appropriate regulatory authority; 2) Increase monitoring and surveillance [117] on the farm and within the ABM; and 3) Promptly (within one month) makes findings publicly available.	This indicator is not applicable. There is only one suspected unidentifiable transmissible agent in the locality and that is Piscine Reo Virus (PRV) which has been tentatively linked to Heart and Skeletal muscle inflammation (HSMI) disease in Europe; however, HSMI disease has not been reported to exist in BC'. Any issue arising from a disease event is reported to the DFO as required by the licence within 24 hours. CFIA would also be informed. For notifiable diseases CFIA places notification on their website. If any unidentifiable transmissible agent causes a mass mortality it is MHC's intention to place those findings on their website. There have been no unidentifiable diseases or mass mortalities recorded for Marine Harvest

		Canada.
E	As applicable, submit data to ASC as per Appendix VI about unidentified transmissible agents or unexplained increases in mortality. If applicable, then data are to be sent to ASC on an ongoing basis (i.e. at least once per year and for each production cycle).	There have been no unexplained increases of mortality and ASC have been informed.
5.4.3 Evidence of compliance [119] with the OIE Aquatic Animal Health Code [120]		
A	Maintain a current version of the OIE Aquatic Animal Health Code on site or ensure staff has access to the most current version.	Appendix to the Fish Health Management plan Appendix 1 certification requirements Revised November 8th 2013. A copy is available to the staff through the 'sharepoint'. This appendix includes link for OIE and refers to the Code.
B	Develop policies and procedures as needed to ensure that farm practices remain consistent with the OIE Aquatic Animal Health Code (5.4.3a) and with actions required under indicator 5.4.4.	The policies are constant as the FHMP is reviewed annually. The appendix will also be reviewed as and when there are changes to certification requirements.
C	-	Policies are implemented and the staff is well informed.

5.4.4 If an OIE-notifiable disease [121] is confirmed on the farm, evidence that: **1. the farm has, at a minimum, immediately culled the pen(s) in which the disease was detected** **2. the farm immediately notified the other farms in the ABM [122]** **3. the farm and the ABM enhanced monitoring and conducted rigorous testing for the disease** **4. the farm promptly [123] made findings publicly available**		
A	Ensure that farm policies and procedures in 5.4.3a describe the four actions required under Indicator 5.4.4 in response to an OIE-notifiable disease on the farm.	Notifiable disease is immediately conveyed to the DFO and the CFIA who take control and determine the action.

B	Inform the CAB if an OIE-notifiable disease has been confirmed on the farm during the current production cycle or the two previous production cycles. If yes, proceed to 5.4.4c. If no, then 5.4.4c and 5.4.4d do not apply.	There have been none in the recent production cycle. In the 2008 production cycle VHS was detected in 15 fish and in Herring around the cages. At the time VHS was not a notifiable disease.
C	If an OIE-notifiable disease was confirmed on the farm (see 5.4.4b), then retain documentary evidence to show that the farm: 1) immediately culled the pen(s) in which the disease was detected; 2) immediately notified the other farms in the ABM [122] 3) enhanced monitoring and conducted rigorous testing for the disease; and 4) promptly (within one month) made findings publicly available.	No notifiable disease was confirmed.
D	As applicable, submit data to ASC as per Appendix VI about any OIE-notifiable disease that was confirmed on the farm. If applicable, then data are to be sent to ASC on an ongoing basis (i.e. at least once per year and for each production cycle).	There were no notifiable diseases on the farm to report.
E	-	There were no notifiable diseases on the farm to report.

PRINCIPLE 6: Develop And Operate Farms In A Socially Responsible Manner
Criterion 6.1 **Freedom of association and collective bargaining**
6.1.1 Evidence that workers have access to trade unions (if they exist) and union representative(s) chosen by themselves without managerial interference

A	Workers have the freedom to join any trade union, free of any form of interference from employers or competing organizations set up or backed by the employer. Farms shall prepare documentation to demonstrate to the auditor that domestic regulation fully meets these criteria.	There is an MHC Code of Conduct which is provided to all employees and is tested to show they have understood. The Code of Conduct can also be accessed via intranet which also allows access to Human resources Policy & Procedure Manual. There is only a union at the processing plant in Port Hardy not at the farm sites. Code of Conduct section 4.3. relates to this area.
B	Union representatives (or worker representatives) are chosen by workers without managerial interference. ILO specifically prohibits “acts which are designated to promote the establishment of worker organizations or to support worker organizations under the control or employers or employers’ organizations."	see 6.1.1a code of conduct section 4.3.
C	Trade union representatives (or worker representatives) have access to their members in the workplace at reasonable times on the premises.	see 6.1.1a code of conduct section 4.3.
D	Be advised that workers and union representatives (if they exist) will be interviewed to confirm the above.	Marsh bay does not have union representation but worker interviews confirmed they are aware of policy.
6.1.2 Evidence that workers are free to form organizations, including unions, to advocate for and protect their rights		
A	Employment contract explicitly states the worker's right of freedom of association.	Stated in code of conduct section 4.3.
B	Employer communicates that workers are free to form organizations to advocate for and protect work rights (e.g. farm policies on Freedom of Association; see 6.12.1).	Employees sign and are tested on Code of Conduct. see 6.1.2a code of conduct section 4.3.
C	Be advised that workers will be interviewed to confirm the above.	Marsh bay does not have union representation but worker interviews confirmed they are aware of policy.

6.1.3 Evidence that workers are free and able to bargain collectively for their rights		
A	Local trade union, or where none exists a reputable civil-society organization, confirms no outstanding cases against the farm site management for violations of employees’ freedom of association and collective bargaining rights.	Contacted BC COALITION FOR HUMAN RIGHTS nothing to report.

B	Employer has explicitly communicated a commitment to ensure the collective bargaining rights of all workers.	Stated in code of conduct section 4.3.
C	There is documentary evidence that workers are free and able to bargain collectively (e.g. collective bargaining agreements, meeting minutes, or complaint resolutions).	Stated in MHC Code of Conduct which signed by the employees.
Criterion 6.2 Child labor		
6.2.1 Percentage of young workers [127] that are protected [128]		
A	In most countries, the law states that minimum age for employment is 15 years. There are two possible exceptions: - in developing countries where the legal minimum age may be set to 14 years (see footnote 125); or - in countries where the legal minimum age is set higher than 15 years, in which case the legal minimum age of the country is followed. If the farm operates in a country where the legal minimum ages is not 15, then the employer shall maintain documentation attesting to this fact.	Ages of all workers are stored on Human Resources management system. There are no persons employed under the age of 15.
B	Minimum age of permanent workers is 15 or older (except in countries as noted above).	Verified through Human Resources Management System.
C	Employer maintains age records for employees that are sufficient to demonstrate compliance.	see 6.2.1b.
6.2.2 Percentage of young workers [127] that are protected [128]		
A	Young workers are appropriately identified in company policies & training programs, and job descriptions are available for all young workers at the site.	There are no young workers employed at Marsh Bay. Young workers are identified in the site operations Health & safety program section 22 New & young workers following the regulations under Work safe BC protecting young workers 15-26 years of age.

B	All young workers (from age 15 to less than 18) are identified and their ages are confirmed with copies of IDs.	No young workers but ages are confirmed on Human Resources Management System.
C	Daily records of working hours (i.e. timesheets) are available for all young workers.	No young workers working hours are recorded on Time Solutions time management system.
D	For young workers, the combined daily transportation time and school time and work time does not exceed 10 hours.	No staff or young workers attending school.
E	Young workers are not exposed to hazards [129] and do not perform hazardous work [130]. Work on floating cages in poor weather conditions shall be considered hazardous.	Young workers are identified in the site operations Health & safety program section 22 New & young workers following the regulations under Work safe BC.
F	Be advised that the site will be inspected and young workers will be interviewed to confirm compliance.	No young workers at Marsh Bay
Criterion 6.3 Forced, bonded or compulsory labor		
6.3.1 Number of incidences of forced, [131] bonded [132] or compulsory labor		
A	Contracts are clearly stated and understood by employees. Contracts do not lead to workers being indebted (i.e. no 'pay to work' schemes through labor contractors or training credit programs).	Not all employees have contracts at Marsh Bay, There is no legislation in BC for Workers to have contracts but MHC are starting to Implement contracts for new starts since 2011 and working towards all employees having a contract. This is covered in Section 4.4 in Code of Conduct.
B	Employees are free to leave workplace and manage their own time.	This was confirmed by worker interviews.
C	Employer does not withhold employee's original identity documents.	Review of personnel files and worker interviews no documents are being held.
D	Employer does not withhold any part of workers' salaries, benefits, property or documents in order to oblige them to continue working for employer.	This was confirmed by worker interviews.
E	Employees are not to be obligated to stay in job to repay debt.	No employees are repaying debt confirmed in worker interviews.
F	Maintain payroll records and be advised that workers will be interviewed to confirm the above.	There is a program for all employees called Time Solutions. This allows employees to change their working hours. This is then verified by the Manager and then checked by payroll before forwarding.
Criterion 6.4 Discrimination		

6.4.1 Evidence of comprehensive [134] and proactive anti-discrimination policies, procedures and practices		
A	Employer has written anti-discrimination policy in place, stating that the company does not engage in or support discrimination in hiring, remuneration, access to training, promotion, termination or retirement based on race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation, age or any other condition that may give rise to discrimination.	This is stated in Code of conduct section 4.2 & 6.1 More detail is in Marine Harvest Human resources Policy & Procedures Manual Section 1 Pg5 Equal employment policy.
B	Employer has clear and transparent company procedures that outline how to raise, file, and respond to discrimination complaints.	Compliant procedure is clearly detailed in HR manual which includes a Harassment Investigation committee.
C	Employer respects the principle of equal pay for equal work and equal access to job opportunities, promotions and raises.	This is covered in MH HR manual Section 5 Pg 65 and Section 2 Pg 26. Salaries are based on roles and responsibilities.
D	All managers and supervisors receive training on diversity and non-discrimination. All personnel receive non-discrimination training. Internal or external training acceptable if proven effective.	All personnel receive training and is logged on the DATS (Digital Action training system).
6.4.2 Number of incidences of discrimination		
A	Employer maintains a record of all discrimination complaints. These records do not show evidence for discrimination.	None evident on this site.
B	Be advised that worker testimonies will be used to confirm that the company does not interfere with the rights of personnel to observe tenets or practices, or to meet needs related to race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation or any other condition that may give rise to discrimination.	Workers interviewed were happy that the company did not discriminate none of the workers had experienced or heard of any issues with discrimination.

Criterion 6.5 **Work environment health and safety**
6.5.1 Percentage of workers trained in health and safety practices, procedures [135] and policies on a yearly basis

A	Employer has documented practices, procedures (including emergency response procedures) and policies to protect employees from workplace hazards and to minimize risk of accident or injury. The information shall be available to employees.	There is a shared point computer system which all employees have access to and allows access to all MHC policies and procedures. All relevant information is posted on walls and is clearly visible.
B	Employees know and understand emergency response procedures.	Emergency procedure is posted in all locations and employees have to sign off to acknowledge they have been trained and understand the procedure.
C	Employer conducts health and safety training for all employees on a regular basis (once a year and immediately for all new employees), including training on potential hazards and risk minimization, Occupational Safety and Health (OSH) and effective use of PPE.	There are training records available for all staff. Viewed on Site. All staff must complete certain requirements as they go through their employment at the site. There is a Brain safe training program which teaches employees how to spot hazards and how deal with them. They are all issued with SLAAP book which they can use to report hazards. There is also a requirement that there are 4 emergency drills conducted annually at each site.
6.5.2 Evidence that workers use Personal Protective Equipment (PPE) effectively		
A	Employer maintains a list of all health and safety hazards (e.g. chemicals).	All sites fill out form on a monthly basis detailing all health and safety hazards such as chemicals which are kept on site.
B	Employer provides workers with PPE that is appropriate to known health and safety hazards.	On site visits there was evidence of PPE being available and in use. Waterproofs, aprons, gloves, googles, ear defenders, respirators, steel toe capped boots and PFD's.
C	Employees receive annual training in the proper use of PPE (see 6.5.1c). For workers who participated in the initial training(s) previously annual refreshment training may suffice, unless new PPE has been put to use.	All training is carried out annually and reminders are issued from the DAT system.
D	Be advised that workers will be interviewed to confirm the above.	Workers interviews confirmed that regular training is carried out and too a good standard.
6.5.3 Presence of a health and safety risk assessment and evidence of preventive actions taken		
A	Employer makes regular assessments of hazards and risks in the workplace. Risk assessments are reviewed and updated at least annually (see also 6.5.1a).	There are monthly Health and safety meeting to identify any concerns. Health & safety management carry out regular site visits and review risk assessments.

B	Employees are trained in how to identify and prevent known hazards and risks (see also 6.5.1c).	This is carried out through risk assessments; Safe work practises (SWP) and Standard Operating procedures (SOP). This is also covered in the Brain safe training.
C	Health and safety procedures are adapted based on results from risk assessments (above) and changes are implemented to help prevent accidents.	As stated in 6.5.3b risk assessments are carried out from which SWP's & SOP's are created.
6.5.4 Evidence that all health- and safety-related accidents and violations are recorded and corrective actions are taken when necessary		
A	Employer records all health- and safety-related accidents.	All accidents and incidents are reported and logged .
B	Employer maintains complete documentation for all occupational health and safety violations and investigations.	All accidents and incidents are investigated to establish immediate, basic and root cause and assessed by severity.
C	Employer implements corrective action plans in response to any accidents that occur. Plans are documented and they include an analysis of root cause, actions to address root cause, actions to remediate, and actions to prevent future accidents of similar nature.	Once the investigation has been carried out As per 6.5.4b action plans are created to prevent further incidents and communicated to other sites.
D	Employees working in departments where accidents have occurred can explain what analysis has been done and what steps were taken or improvements made.	There seems to be very few incidents but workers confirmed that any issues even if no injuries occurred are dealt with promptly and hazards addressed.
6.5.5 Evidence of employer responsibility and/or proof of insurance (accident or injury) for 100% of worker costs in a job-related accident or injury when not covered under national law		
A	Employer maintains documentation to confirm that all personnel are provided sufficient insurance to cover costs related to occupational accidents or injuries (if not covered under national law). Equal insurance coverage must include temporary, migrant or foreign workers. Written contract of employer responsibility to cover accident costs is acceptable evidence in place of insurance.	All employees completing 3 months' probation period are covered by Great West Life Benefits Plan. There is Work Safe BC for H&S and there is the MSP - Medical Services Plan, This is paid for by the employer.
6.5.6 Evidence that all diving operations are conducted by divers who are certified		
A	Employer keeps records of farm diving operations and a list of all personnel involved. In case an external service provider was hired, a statement that provider conformed to all relevant criteria must be made	Certification is available for all divers at the site. Only a few companies are used. When they arrive on site documentation is checked and a Dive Contract familiarisation form is filled out this is required every 60 days.

	available to the auditor by this provider.	
B	Employer maintains evidence of diver certification (e.g. copies of certificates) for each person involved in diving operations. Divers shall be certified through an accredited national or international organization for diver certification.	This is covered by the Dive Inspection checklist.
Criterion 6.6 Wages		
6.6.1 The percentage of workers whose basic wage [136] (before overtime and bonuses) is below the minimum wage [137]		
A	Employer keeps documents to show the legal minimum wage in the country of operation. If there is no legal minimum wage in the country, the employer keeps documents to show the industry-standard minimum wage.	There is a copy of the Employment Standards Branch Factsheet from April 2011 on the Minimum Wage in BC. This is from the Ministry of Labour, Citizen's Services and Open Government.
B	Employer's records (e.g. payroll) confirm that worker's wages for a standard work week (≤ 48 hours) always meet or exceed the legal minimum wage. If there is no legal minimum wage, the employer's records must show how the current wage meets or exceeds industry standard. If wages are based on piece-rate or pay-per-production, the employer's records must show how workers can reasonably attain (within regular working hours) wages that meet or exceed the legal minimum wage.	There is a document detailing breakdown of pay rates for each job and increments as employee's progress with their training through each level.
C	Maintain documentary evidence (e.g. payroll, timesheets, punch cards, production records, and/or utility records) and be advised that workers will be interviewed to confirm the above.	Workers interviews and payroll and review of the Time Solutions system confirm the above.
6.6.2 Evidence that the employer is working toward the payment of basic needs wage [138]		

A	Proof of employer engagement with workers and their representative organizations, and the use of cost of living assessments from credible sources to assess basic needs wages. Includes review of any national basic needs wage recommendations from credible sources such as national universities or government.	MHC use Hays group to assist with setting pay levels and carry out here own reviews to ensure that levels are correct. There are details of living wages for BC available which states the living wage is $16.42 MHC starting wage is [redacted].
B	Employer has calculated the basic needs wage for farm workers and has compared it to the basic (i.e. current) wage for their farm workers.	The HR policy details how the wages structure is set out.
C	Employer demonstrates how they have taken steps toward paying a basic needs wage to their workers.	see 6.6.2a&b.
6.6.3 Evidence of transparency in wage-setting and rendering [139]		
A	Wages and benefits are clearly articulated to workers and documented in contracts.	This is contained in the wage structure for the company and is based solely on role and responsibilities and is detailed HR policy.
B	The method for setting wages is clearly stated and understood by workers.	Clearly stated in HR policy.
C	Employer renders wages and benefits in a way that is convenient for the worker (e.g. cash, check, or electronic payment methods). Workers do not have to travel to collect benefits nor do they receive promissory notes, coupons or merchandise in lieu of payment.	Electronic Bank transfer every 2 weeks.
D	Be advised that workers will be interviewed to confirm the above.	Worker interviews confirmed the above.
Criterion 6.7 Contracts (labor) including subcontracting		
6.7.1 Percentage of workers who have contracts [141]		
A	Employer maintains a record of all employment contracts.	In BC contracts are not a requirement but since 2011 MHC has started to implement contracts for all new starters and is looking to provide all employees with a contract. All workers at Marsh Bay have contracts.
B	There is no evidence for labor-only contracting relationships or false apprenticeship schemes.	There was no evidence of Labor only contracts.
C	Be advised that workers will be interviewed to confirm the above.	This was confirmed by Worker interviews.

6.7.2 Evidence of a policy to ensure social compliance of its suppliers and contractors		
A	Farm has a policy to ensure that all companies contracted to provide supplies or services (e.g. divers, cleaning, and maintenance) have socially responsible practices and policies.	The Code of Conduct Training which states that Contractors must comply with the Code of Conduct, which has an ant discriminatory Policy.
B	Producing company has criteria for evaluating its suppliers and contractors. The company keeps a list of approved suppliers and contractors.	There is supplier/contract approval process which is used to compile an approved list of suppliers/contractors. Risk, performance are included as part of the process.
C	Producing company keeps records of communications with suppliers and subcontractors that relate to compliance with 6.7.2.	There are records of communications with contractors, selection criteria and contracts are being revised.
Criterion 6.8 Conflict resolution		
6.8.1 Evidence of worker access to effective, fair and confidential grievance procedures		
A	Employer has a clear labor conflict resolution policy for the presentation, treatment, and resolution of worker grievances in a confidential manner.	There is a complaint procedure detailed in the HR Policy which explains the reporting procedure including bullying and harassment and confidentiality policy.
B	Workers are familiar with the company's labor conflict policies and procedures. There is evidence that workers have fair access.	All employees have access to policies through the intranet.
C	Maintain documentary evidence (e.g. complaint or grievance filings, minutes from review meetings) and be advised that workers will be interviewed to confirm the above.	Written Warnings are held on file.
6.8.2 Percentage of grievances handled that are addressed [142] within a 90-day timeframe		
A	Employer maintains a record of all grievances, complaints and labor conflicts that are raised.	A record of grievances is held by the HR director each stage of the process has to be dealt with in 14 days.
B	Employer keeps a record of follow-up (i.e. corrective actions) and timeframe in which grievances are addressed.	As stated above.
C	Maintain documentary evidence and be advised that workers will be interviewed to confirm that grievances are addressed within a 90-day timeframe.	None of the workers interviewed had any grievances so unable to confirm. As stated above company policy is to respond to each stage of the process in 14 days.
Criterion 6.9 Disciplinary practices		

6.9.1 Incidences of excessive or abusive disciplinary actions		
A	Employer does not use threatening, humiliating or punishing disciplinary practices that negatively impact a worker's physical and mental health or dignity.	There was no evidence of this during the audit. Worker displayed a positive and happy attitude towards the company.
B	Allegations of corporeal punishment, mental abuse [144], physical coercion, or verbal abuse will be investigated by auditors.	No evidence or allegations during the audit.
C	Be advised that workers will be interviewed to confirm there is no evidence for excessive or abusive disciplinary actions.	Workers interviews confirmed no issues with excessive or abusive actions.
6.9.2 Evidence of a functioning disciplinary action policy whose aim is to improve the worker [143]		
A	Employer has written policy for disciplinary action which explicitly states that its aim is to improve the worker [143].	The company has written policy disciplinary action but does not "explicitly" state to improve the worker. The company does have performance management policy so this should be noted alongside the disciplinary policy.
B	Maintain documentary evidence (e.g. worker evaluation reports) and be advised that workers will be interviewed to confirm that the disciplinary action policy is fair and effective.	None of the workers had been involved with a disciplinary procedure but confirmed workers are regularly evaluated and reviewed.
Criterion 6.10 Working hours and overtime		
6.10.1 Incidences, violations or abuse of working hours and overtime laws [145]		
A	Employer has documentation showing the legal requirements for working hours and overtime in the region where the farm operates. If local legislation allows workers to exceed internationally accepted recommendations (48 regular hours, 12 hours overtime) then requirements of the international standards apply.	Company holds document for Employment Standards Act for BC for working regulations.
B	Records (e.g. time sheets and payroll) show that farm workers do not exceed the number of working hours allowed under the law.	Records on Time Solutions system show that workers are not exceeding working hours allowed.
C	If an employer requires employees to work shifts at the farm (e.g. 10 days on and six days off), the employer compensates workers with an equivalent time off in the calendar month and there is evidence that employees have agreed to this schedule (e.g. in the hiring contract).	8 days on 6 days off. The working shift is 10 hour days. All staff live on site and have agreed to this schedule.

D	Be advised that workers will be interviewed to confirm there is no abuse of working hours and overtime laws.	Workers confirmed that there is no abuse of working hours or overtime laws.
6.10.2 Overtime is limited, voluntary [146], paid at a premium rate and restricted to exceptional circumstances		
A	Payment records (e.g. payslips) show that workers are paid a premium rate for overtime hours.	Workers are paid premium rate for overtime hours they are paid 150% for the first 2 hours and 200% for any hours worked after that.
B	Overtime is limited and occurs in exceptional circumstances as evidenced by farm records (e.g. production records, time sheets, and other records of working hours).	Time Solutions System confirmed that overtime is infrequent.
C	Be advised that workers will be interviewed to confirm that all overtime is voluntary except where there is a collective bargaining agreement which specifically allows for compulsory overtime.	Workers confirmed that overtime is rare and is voluntary.
Criterion 6.11 Education and training		
6.11.1 Evidence that the company encourages and sometimes supports education initiatives for all workers (e.g., courses, certificates and degrees)		
A	Company has written policies related to continuing education of workers. Company provides incentives (e.g. subsidies for tuition or textbooks, time off prior to exams, flexibility in work schedule) that encourage workers to participate in educational initiatives. Note that such offers may be contingent on workers committing to stay with the company for a pre-arranged time.	The company encourages employees to increase knowledge and participate in training courses and supports the workers in doing this. As stated in HR policy section 9 Employee training and development and education assistance programs.
B	Employer maintains records of worker participation in educational opportunities as evidenced by course documentation (e.g. list of courses, curricula, certificates, degrees).	All training records are maintained on the DATS system.
C	Be advised that workers will be interviewed to confirm that educational initiatives are encouraged and supported by the company.	Workers confirmed that they are encouraged to learn and be involved with training courses. Other than compulsory health and safety training workers dictate the speed of additional training.
Criterion 6.12 Corporate policies for social responsibility		

6.12.1 Demonstration of company-level [148] policies in line with the standards under 6.1 to 6.11 above		
A	Company-level policies are in line with all social and labor requirements presented in 6.1 through 6.11.	The Code of Conduct Policy and also the HR Policy are in line with all social and labor requirements.
B	Company-level policies (see 6.12.1a) are approved by the company headquarters in the region where the site applying for certification is located.	Corporate policy is approved by the Senior Management Team in Campbell River.
C	The scope of corporate policies (see 6.12.1a) covers all company operations relating to Salmonids production in the region (i.e. all smolt production facilities, grow-out facilities and processing plants).	The scope of all corporate policies covers all company operations.
D	The site that is applying for certification provides auditors with access to all company-level policies and procedures as are needed to verify compliance with 6.12.1a (above).	All documentation was provided.
PRINCIPLE 7: Be A Good Neighbor And Conscientious Citizen		
Criterion 7.1 Community engagement		
7.1.1 Evidence of regular and meaningful [149] consultation and engagement with community representatives and organizations		
A	The farm pro-actively arranges for consultations with the local community at least twice every year (bi-annually).	There is a community engagement letter it is an invitation sent to mayor of each community it covers the direction of the company and initiatives that are being developed. There is an agreement in place with the FN in this area.
B	Consultations are meaningful. OPTIONAL: the farm may choose to use participatory Social Impact Assessment (pSIA) or an equivalent method for consultations.	The company recently sent out communication to all the local communities with details on new technology, Therapeutic Treatments, opportunities for future growth and information regarding certification.
C	Consultations include participation by representatives from the local community who were asked to contribute to the agenda.	See 7.1.1b
D	Consultations include communication about, or discussion of, the potential health risks of therapeutic treatments (see Indicator 7.1.3).	See 7.1.1b
E	Maintain records and documentary evidence (e.g. meeting agenda, minutes, report) to demonstrate that consultations comply with the	No minutes are available from a meeting that was held in March it details attendance and questions raised but do not include responses from MHC so unable

	above.	to gain a full picture of the outcome of the meeting.
F	Be advised that representatives from the local community and organizations may be interviewed to confirm the above.	MHC was aware only one response has been received from the local community but no other details have been provided.
7.1.2 Presence and evidence of an effective [150] policy and mechanism for the presentation, treatment and resolution of complaints by community stakeholders and organizations		
A	Farm policy provides a mechanism for presentation, treatment and resolution of complaints lodged by stakeholders, community members, and organizations.	MHC has a policy Doc#5/FW905 External Complaint resolution.
B	The farm follows its policy for handling stakeholder complaints as evidenced by farm documentation (e.g. follow-up communications with stakeholders, reports to stakeholder describing corrective actions).	All external complaints are logged by Communications Manager. Log details that raised the compliant and what it is and then details what is carried out until closed off.
C	The farm's mechanism for handling complaints is effective based on resolution of stakeholder complaints (e.g. follow-up correspondence from stakeholders).	The company policy is all complaints are passed to the communications manager and then forwarded to senior management should it be required.
D	Be advised that representatives from the local community, including complainants where applicable, may be interviewed to confirm the above.	see 7.1.1f
7.1.3 Evidence that the farm has posted visible notice [151] at the farm during times of therapeutic treatments and has, as part of consultation with communities under 7.1.1, communicated about potential health risks from treatments		
A	Farm has a system for posting notifications at the farm during periods of therapeutic treatment. (use of aneastatic baths is not regarded a therapeutant)	Notices are posted on the site if Therapeutic Treatments are being carried out. Last notice to be posted was in December 2013 for an EB treatment. Photographic evidence was provided.
B	Notices (above) are posted where they will be visible to affected stakeholders (e.g. posted on waterways for fishermen who pass by the farm).	Notices are posted on the side of cages so there can be seen by anyone entering the site.
C	Farm communicates about the potential health risks from treatments during community consultations (see 7.1.1)	This has been communicated in the engagement letter as detailed 7.1.1b.
D	Be advised that members of the local community may be interviewed to confirm the above.	see 7.1.1f.

Criterion 7.2 Respect for indigenous and aboriginal cultures and traditional territories		
7.2.1 Evidence that indigenous groups were consulted as required by relevant local and/or national laws and regulations		
A	Documentary evidence establishes that the farm does or does not operate in an indigenous territory (to include farms that operate in proximity to indigenous or aboriginal people [152]). If not then the requirements of 7.2.1 do not apply.	MHC are operating in some indigenous territories and have several agreements (IBA) in place with FN.
B	Farm management demonstrates an understanding of relevant local and/or national laws and regulations that pertain to consultations with indigenous groups.	The agreements demonstrate that MHC are aware of Local/national laws and regulations for each FN.
C	As required by law in the jurisdiction: - farm consults with indigenous groups and retains documentary evidence (e.g. meeting minutes, summaries) to show how the process complies with 7.2.1b; OR - farm confirms that government-to-government consultation occurred and obtains documentary evidence.	There is a spreadsheet detailing agreements with each FN. There is also a log sheet that records all meetings/calls and communication.
D	Be advised that representatives from indigenous groups may be interviewed to confirm the above.	A representative was due to attend during the audit but did not attend.
7.2.2 Evidence that the farm has undertaken proactive consultation with indigenous communities		
A	See results of 7.2.1a (above) to determine whether the requirements of 7.2.2 apply to the farm.	As detailed in 7.2.1.
B	Be advised that representatives from indigenous communities may be interviewed to confirm that the farm has undertaken proactive consultations.	see 7.2.1d.
7.2.3 Evidence of a protocol agreement, or an active process [153] to establish a protocol agreement, with indigenous communities		
A	See results of 7.2.1a (above) to determine whether the requirements of 7.2.3 apply to the farm.	As detailed in 7.2.1.

B	Maintain evidence to show that the farm has either: 1) reached a protocol agreement with the indigenous community and this fact is documented; or 2) continued engagement in an active process [153] to reach a protocol agreement with the indigenous community.	There are agreements in place as detailed in 7.2.1a and continuous engagements as detailed 7.2.1c
C	Be advised that representatives from indigenous communities may be interviewed to confirm either 7.2.3b1 or b2 (above) as applicable.	see 7.2.1d.
Criterion 7.3 Access to resources		
7.3.1 Changes undertaken restricting access to vital community resources [154] without community approval		
A	Resources that are vital [155] to the community have been documented and are known by the farm (i.e. through the assessment process required under Indicator 7.3.2).	As detailed in CEAA screening report MHC do not have exclusive use of the location the farms are located in.
B	The farm seeks and obtains community approval before undertaking changes that restrict access to vital community resources. Approvals are documented.	There is no restriction of access and report notes First Nation has no issues with the use of the location.
C	Be advised that representatives from the community may be interviewed to confirm that the farm has not restricted access to vital resources without prior community approval.	see 7.2.1d.
7.3.2 Evidence of assessments of company's impact on access to resources		
A	There is a documented assessment of the farm's impact upon access to resources. Can be completed as part of community consultations under 7.1.1.	The CEAA report for the site includes consultation with FN , local community and government. It is noted in the report that FN has no issues with license application. Living Oceans raised some concerns but these have been dealt with by the government by licensing and measures that have been put into place.
B	Be advised that representatives from the community may be interviewed to generally corroborate the accuracy of conclusions presented in 7.3.2a.	see 7.2.1d.

SECTION 8: Standards For Suppliers Of Smolt		
Standards related to Principle 1 **8.1 Compliance with local and national regulations on water use and discharge, specifically providing permits related to water quality**		
A	Identify all of the farm's smolt suppliers. For each supplier, identify the type of smolt production system used (e.g. open, semi or closed systems) and submit this information to ASC (Appendix VI).	Dalrymple, Ocean Falls hatcheries and Big tree are the egg providers.
B	Where legal authorisation related to water quality are required, obtain copies of smolt suppliers' permits.	Big tree creek RE 7495 and Ocean falls RE 17135 and Dalrymple PE7802 are the permit reference numbers. There is an Aquaculture Licence that was issued under PAR. The current Dalrymple licence expires on 18/6/2014 and the ref no is AQFW 104526 2012. The Ocean Falls PAR licence expires on 18/6/ 2014 and the ref no is AQFW 104387 2012. Big Tree Creek supplies fry to the other smolt units Ocean Falls and Dalrymple and its PAR licence is AQFW 104528 2012 expiry 18/6/14. All sites require movement orders when moving fry or smolts through DFO.
C	Obtain records from smolt suppliers showing monitoring and compliance with discharge laws, regulations, and permit requirements as required.	On the permits there are conditions referring to parameters such as Ammonia, BOD, Nitrate and Phosphate emissions. Over the past 4 years these parameters are monitored monthly at the point where the hatchery boundary ends. The effluent monitoring point is not where the effluent stream enters the receiving water. Parameters for Nitrate and phosphate regularly exceed the allowable levels however MHC have entered into a dialogue with the department of environment to continuously improve and upgrade the Hatcherys. There is a letter on file from March from the Ministry of environment stating that there has been no enforcement no will there be as long as there is continuous improvement.
	-	Records date back to 2009. The hatcheries are all MHC units. There are letters on file from the ministry of environment stating that there has been no enforcement on breaches as MHC have good record exercising due diligence.
8.2 Compliance with labor laws and regulations		
A	Obtain declarations from smolt suppliers affirming compliance with labor laws and regulations.	The suppliers are all owned by Marine harvest and apply the same labour principles as the sea sites.

B	Keep records of supplier inspections for compliance with national labor laws and codes (only if such inspections are legally required in the country of operation; see 1.1.3a)	The suppliers are all owned by Marine harvest and apply the same labour principles as the sea sites.
Standards related to Principle 2		
8.3 Evidence of an assessment of the farm's potential impacts on biodiversity and nearby ecosystems that contains the same components as the assessment for grow-out facilities under 2.4.1		
A	Obtain from the smolt supplier(s) a documented assessment of the smolt site's potential impact on biodiversity and nearby ecosystems. The assessment must address all components outlined in Appendix I-3.	There is draft Biodiversity Impact assessments for each of the 3 hatcheries which was carried out by Mainstream Biological consulting dated for March 2014. These assessments cover areas such as Site assessments, Scope of Biodiversity, Site operations and assessments, Aquatic and terrestrial resources, Summaries and recommendations.
B	Obtain from the smolt supplier(s) a declaration confirming they have developed and are implementing a plan to address potential impacts identified in the assessment.	MHC is in constantly in contact with the ministry of environment and has submitted a development plan to address all impacts in the assessments carried dated March 2014. For Dalrymple the plan was submitted on March 11th and Big tree creek plan was submitted on March 13th showing immediate submission.
8.4 Maximum total amount of phosphorus released into the environment per metric ton (mt) of fish produced over a 12-month period (see Appendix VIII-1)		
A	Obtain records from smolt suppliers showing amount and type of feeds used for smolt production during the past 12 months.	All Skretting feed is used. Amounts used are logged on Aqua farmer.
B	For all feeds used by the smolt suppliers (result from 8.4a), keep records showing phosphorus content as determined by chemical analysis or based on feed supplier declaration (Appendix VIII-1).	As of Q1 in 2014 the phosphorus levels in diets are as follows. [redacted] measurements in Phos mg/kg - typical.
C	Using the equation from Appendix VIII-1 and results from 8.4a and b, calculate the total amount of phosphorus added as feed during the last 12 months of smolt production.	Calculations have been calculated for each of the hatcheries and clearly labelled as feed information.
D	Obtain from smolt suppliers records for stocking, harvest and mortality which are sufficient to calculate the amount of biomass produced (formula in Appendix VIII-1) during the past 12 months.	Dalrymple biomass produced was [redacted] tons, Big tree creek biomass produced was [redacted] and Ocean falls biomass was [redacted] tons.
E	Calculate the amount of phosphorus in fish biomass produced (result from 8.4d) using the formula in Appendix VIII-1.	The phosphorus levels have been calculated. The discharge in tons was [redacted].

F	If applicable, obtain records from smolt suppliers showing the total amount of P removed as sludge (formula in Appendix VIII-1) during the past 12 months.	Total phosphorus removed as sludge was Dalrymple [redacted] tons,
G	Using the formula in Appendix VIII-1 and results from 8.4a-f (above), calculate total phosphorus released per ton of smolt produced and verify that the smolt supplier is in compliance with requirements.	The calculations show that the hatcheries release [redacted] tons of phosphorus per ton produced.
Standards related to Principle 3 **8.5 If a non-native species is being produced, the species shall have been widely commercially produced in the area prior to the publication [156] of the SAD standards**		
A	Obtain written evidence showing whether the smolt supplier produces a non-native species or not. If not, then Indicator 8.5 does not apply.	Non-native Atlantic salmon are farmed.
B	Provide the farm with documentary evidence that the non-native species was widely commercially produced in the area before publication of the SAD Standard. (See definition of area under 3.2.1).	DFO website shows that introductions occurred in 1985 from Scotland.
C	If the smolt supplier cannot provide the farm with evidence for 8.5b, provide documentary evidence that the farm uses only 100% sterile fish.	Evidence provided.
D	If the smolt supplier cannot provide the farm with evidence for 8.5b or 8.5c, provide documented evidence for each of the following: 1) non-native species are separated from wild fish by effective physical barriers that are in place and well maintained; 2) barriers ensure there are no escapes of reared fish specimens that might survive and subsequently reproduce; and 3) barriers ensure there are no escapes of biological material that might survive and subsequently reproduce.	Evidence provided.
E	Retain evidence as described in 8.5a-d necessary to show compliance of each facility supplying smolt to the farm.	Atlantic salmon are farmed.
8.6 Maximum number of escapees [158] in the most recent production cycle		
A	Obtain documentary evidence to show that smolt suppliers maintained monitoring records of all incidences of confirmed or suspected escapes, specifying date, cause, and estimated number of escapees.	There are no escapes reported from any of the three hatcheries. There are screens in place on each tank and on the effluent water which insures no escapes.

B	Using smolt supplier records from 8.6a, determine the total number of fish that escaped. Verify that there were fewer than 300 escapees from the smolt production facility in the most recent production cycle.	There have been no escapes reported.
C	Inform smolt suppliers in writing that monitoring records described in 8.6a must be maintained for at least 10 years beginning with the production cycle for which the farm is first applying for certification (necessary for farms to be eligible to apply for the exception noted in [159]).	The suppliers are all Marine Harvest facilities. All monitoring records are submitted to DFO who keep them indefinitely and are available on their website.
D	d. If an escape episode occurs at the smolt production facility (i.e. an incident where > 300 fish escaped), the farm may request a rare exception to the Standard [159]. Requests must provide a full account of the episode and must document how the smolt producer could not have predicted the events that caused the escape episode.	There have been no reported escapes from any of the hatcheries. They all have reporting conditions with their PAR licences the same as the marine sites.
8.7 Accuracy [160] of the counting technology or counting method used for calculating the number of fish		
A	Obtain records showing the accuracy of the counting technology used by smolt suppliers. Records must include copies of spec sheets for counting machines and common estimates of error for hand-counts.	Vaki automatic counters are used with a reported accuracy of +/- 2%. The smolts are counted 3 times at vaccination, Loading for transfer and then by the well boat into the pens. The difference in numbers vaccination count to transfer count was less than 1%.
B	Review records to verify that accuracy of the smolt supplier's counting technology or counting method is ≥ 98%.	The difference in numbers vaccination count to transfer count was [redacted]. A difference of [redacted] fish.
Standards related to Principle 4 **8.8 Evidence of a functioning policy for proper and responsible treatment of non-biological waste from production (e.g., disposal and recycling)**		
A	From each smolt supplier obtain a policy which states the supplier's commitment to proper and responsible treatment of non-biological waste from production. It must explain how the supplier's policy is consistent with best practice in the area of operation.	The hatcheries are part of Marine Harvest Canada. The feed bags, pallets and plastic are all sent back to the feed company. There is a waste management plan in place for MHC.
8.9 Presence of an energy-use assessment verifying the energy consumption at the smolt production facility (see Appendix V subsection 1 for guidance and required components of the records and assessment)		
A	Obtain records from the smolt supplier for energy consumption by source (fuel, electricity) at the supplier's facility throughout each year.	All records of fuel and electricity use are recorded for each of the facilities.

B	Confirm that the smolt supplier calculates total energy consumption in kilojoules (kj) during the last year.	All the energy use is converted to Kilojoule equivalents.
C	Obtain records to show the smolt supplier calculated the total weight of fish in metric tons (mt) produced during the last year.	For all MHC sites FW or SW feed use and fish growth is recorded on the Aqua farmer centralised database management system.
D	Confirm that the smolt supplier used results from 8.9b and 8.9c to calculate energy consumption on the supplier's facility as required and that the units are reported as kilojoule/mt fish/production cycle.	For Dalrymple the result [redacted] kJ/mT. Big tree creek the result is [redacted] mJ/mT. Ocean Falls the result is [redacted] mJ/mT. These figures are only for the fish sent to Shelter bay and were then split to Marsh Bay and do not cover the entire production form the facilities. The full production figures for each facility are available for example Dalrymple the figure is [redacted] kJ/mT.
E	Obtain evidence to show that smolt supplier has undergone an energy use assessment in compliance with requirements of Appendix V-1. Can take the form of a declaration detailing a-e.	Energy use assessment is conducted companywide for MHC.
8.10 Records of greenhouse gas (GHG [161]) emissions [162] at the smolt production facility and evidence of an annual GHG assessment (See Appendix V, subsection 1)		
A	Obtain records of greenhouse gas emissions from the smolt supplier's facility.	GHG's are recorded for each of the facilities.
B	Confirm that, on at least an annual basis, the smolt supplier calculates all scope 1 and scope 2 GHG emissions in compliance with Appendix V-1.	Dalrymple result [redacted] Big tree result is [redacted]. Ocean falls is [redacted]. Units are in Kg of CO2 emissions.
C	For GHG calculations, confirm that the smolt supplier selects the emission factors which are best suited to the supplier's operation. Confirm that the supplier documents the source of the emissions factors.	All emission factors are available.
D	For GHG calculations involving conversion of non-CO2 gases to CO2 equivalents, confirm that the smolt suppliers specify the Global Warming Potential (GWP) used and its source.	The formula came from Marine Harvests Scottish office and the source came from the Scottish Department of energy and climate change within DEFRA.
E	Obtain evidence to show that the smolt supplier has undergone a GHG assessment in compliance with requirements Appendix V-1 at least annually.	Annual assessment and method was reviewed.
Standards related to Principle 5 **8.11 Evidence of a fish health management plan, approved by the designated veterinarian, for the identification and monitoring of fish diseases and parasites**		
A	Obtain a copy of the supplier's fish health management plan for the identification and monitoring of fish disease and parasites.	The fish health management plan is the same as the FHMP used on the seawater sites for MHC.

B	Keep documentary evidence to show that the smolt supplier's health plans were approved by the supplier's designated veterinarian.	The veterinarian covers all the MHC operations.
8.12 Percentage of fish that are vaccinated for selected diseases that are known to present a significant risk in the region and for which an effective vaccine exists [163]		
A	Maintain a list of diseases that are known to present a significant risk in the region, developed by farm veterinarian and supported by scientific evidence.	The list of diseases is available in the Fish health management plan.
B	Maintain a list of diseases for which effective vaccines exist for the region, developed by the farm veterinarian and supported by scientific evidence.	Vaccinating for viruses are not compulsory but all the 3 companies that farm salmon in the area vaccinated anyway.
C	Obtain from the smolt supplier(s) a declaration detailing the vaccines the fish received.	All fish are vaccinated twice. Shelter Bay has 7 cages vaccinated against Furunculosis and Vibriosis and 1 against Furunclosis, Vibriosis and BKD.
D	Demonstrate, using the lists from 8.12a-c above, that all salmon on the farm received vaccination against all selected diseases known to present a significant risk in the regions for which an effective vaccine exists.	As all FW and SW sites belong to MHC all information is found on the Aqua farmer system.
8.13 Percentage of smolt groups [164] tested for select diseases of regional concern prior to entering the grow-out phase on farm		
A	Obtain from the smolt supplier a list of diseases of regional concern for which smolt should be tested. List shall be supported by scientific analysis as described in the Instruction above.	Regional concern diseases are listed on the PAR licence.
B	Obtain from the smolt supplier(s) a declaration and records confirming that each smolt group received by the farm has been tested for the diseases in the list (8.13a).	There is fish health service reports available from ZOETIS, part of Pfizer animal health, showing tests that were carried out on smolts from Ocean falls dated 20/2/13. These fish were destined for Shelter bay and on to Marsh bay once they reached [redacted]. Sixty salmon were submitted for viral and bacterial screening. Fish health certificates accompany the fish to the receiving site. All groups are tested. There are approximately 16 groups per production year.
8.14 Detailed information, provided by the designated veterinarian, of all chemicals and therapeutants used during the smolt production cycle, the amounts used (including grams per ton of fish produced), the dates used, which group of fish were treated and against which diseases, proof of proper dosing and all disease and pathogens detected on the site		
A	Obtain from the smolt supplier(s) a detailed record of all chemical and therapeutant use for the fish sold to the farm that is signed by their veterinarian and includes:	There has been no use of antibiotics in the hatcheries. Incoming water is disinfected with Ozone. All other chemical or therapeutant use is recorded on Aqua farmer for example [redacted] used for anesthetizing fish.

	- name of the veterinarian prescribing treatment; - product name and chemical name; - reason for use (specific disease) - date(s) of treatment; - amount (g) of product used; - dosage; - mt of fish treated; - the WHO classification of antibiotics (also see note under 5.2.8); and - the supplier of the chemical or therapeutant.	
8.15 Allowance for use of therapeutic treatments that include antibiotics or chemicals that are banned [165] in any of the primary salmon producing or importing countries [166]		
A	Provide to the smolt supplier the list (see 5.2.2a) of therapeutants, including antibiotics and chemicals, that are proactively banned for use in food fish for the primary salmon producing and importing countries listed in [166].	A full list is available.
B	Inform smolt supplier that the treatments on the list cannot be used on fish sold to a farm with ASC certification.	The smolt supplier is also MHC facilities.
C	Compare therapeutant records from smolt supplier (8.14) to the list (8.15a) and confirm that no therapeutants appearing on the list (8.15a) were used on the smolt purchased by the farm.	Full records can be found on the Aqua farmer database.
8.16 Number of treatments of antibiotics over the most recent production cycle		
A	Obtain from the smolt supplier records of all treatments of antibiotics (see 8.14a).	There have been no treatments in the freshwater units.
B	Calculate the total number of treatments of antibiotics from their most recent production cycle.	There have been no treatments in the freshwater units.
8.17 Allowance for use of antibiotics listed as critically important for human medicine by the WHO [167]		
A	Provide to smolt supplier(s) a current version of the WHO list of antimicrobials critically and highly important for human health [167].	There have been no antibiotic treatments in the freshwater units.

B	Inform smolt supplier that the antibiotics on the WHO list (8.17a) cannot be used on fish sold to a farm with ASC certification.	There have been no antibiotic treatments in the freshwater units.
C	Compare smolt supplier's records for antibiotic usage (8.14, 8.15a) with the WHO list (8.17a) to confirm that no antibiotics listed as critically important for human medicine by the WHO were used on fish purchased by the farm.	There have been no antibiotic treatments in the freshwater units.
8.18 Evidence of compliance [169] with the OIE Aquatic Animal Health Code [170] Note: see instructions for Indicator 5.4.3 regarding evidence of compliance with the OIE Aquatic Animal Health Code.		
A	Provide the smolt supplier with a current version of the OIE Aquatic Animal Health Code (or inform the supplier how to access it from the internet).	MHC owns the hatcheries. MHC apply the national aquatic animal health plan and its available on the CFIA webpage at www.inspection.gc.ca
B	Inform the supplier that an ASC certified farm can only source smolt from a facility with policies and procedures that ensure that its smolt production practices are compliant with the OIE Aquatic Animal Health Code.	MHC is the smolt supplier.
C	Obtain a declaration from the supplier stating their intent to comply with the OIE code and copies of the smolt supplier's policies and procedures that are relevant to demonstrate compliance with the OIE Aquatic Animal Health Code.	MHC is the smolt supplier.
Standards related to Principle 6 **8.19 Evidence of company-level policies and procedures in line with the labor standards under 6.1 to 6.11**		
A	Obtain copies of smolt supplier's company-level policies and procedures and a declaration of compliance with the labor standards under 6.1 to 6.11.	The same polices apply as detailed in Principle 6 as it is the same company.
B	Review the documentation and declaration from 8.19a to verify that smolt supplier's policies and procedures are in compliance with the requirements of labor standards under 6.1 to 6.11.	The same polices apply as detailed in Principle 6 as it is the same company.
Standards related to Principle 7 **8.20 Evidence of regular consultation and engagement with community representatives and organizations**		
A	From each smolt supplier obtain documentary evidence of consultations and engagement with the community.	The same consultations as detailed in principle 7 (7.2.1a) as it is the same company and contact Ian Roberts Communication Manager.

B	Review documentation from 8.20a to verify that the smolt supplier's consultations and community engagement complied with requirements.	As detailed 8.20a
8.21 Evidence of a policy for the presentation, treatment and resolution of complaints by community stakeholders and organizations		
A	Obtain a copy of the smolt supplier's policy for presentation, treatment and resolution of complaints by community stakeholders and organizations.	The same polices apply as detailed in Principle 7 as it is the same company.
8.22 Where relevant, evidence that indigenous groups were consulted as required by relevant local and/or national laws and regulations		
A	Obtain documentary evidence showing that the smolt supplier does or does not operate in an indigenous territory (to include farms that operate in proximity to indigenous or aboriginal people (see Indicator 7.2.1). If not then the requirements of 8.22 do not apply.	As detailed 8.20a
B	Obtain documentation to demonstrate that, as required by law in the jurisdiction: smolt supplier consulted with indigenous groups and retains documentary evidence (e.g. meeting minutes, summaries) to show how the process complies with 7.2.1b; OR smolt supplier confirms that government-to-government consultation occurred and obtains documentary evidence.	As detailed 8.20a
8.23 Where relevant, evidence that the farm has undertaken proactive consultation with indigenous communities		
A	See results of 8.22a (above) to determine whether the requirements of 8.23 apply to the smolt supplier.	As detailed in 7.2.1a & 8.20a
B	Where relevant, obtain documentary evidence that smolt suppliers undertake proactive consultations with indigenous communities.	As detailed in 7.2.1a & 8.20a
ADDITIONAL REQUIREMENTS FOR OPEN (NET-PEN) PRODUCTION OF SMOLT **In addition to the requirements above, if the smolt is produced in an open system, evidence shall be provided that the following are met:**		
8.24 Allowance for producing or holding smolt in net pens in water bodies with native Salmonids		
A	Obtain a declaration from the farm's smolt supplier stating whether the supplier operates in water bodies with native Salmonids.	The hatcheries are all land based that supply this SW site.

B	Request smolt suppliers to identify all water bodies in which they operate net pens for producing smolt and from which facilities they sell to the client.	The hatcheries are all land based that supply this SW site.
C	For any water body identified in 8.24b as a source of smolt for the farm, determine if native Salmonids are present by doing a literature search or by consulting with a reputable authority. Retain evidence of search results.	The hatcheries are all land based that supply this SW site.
8.25 Allowance for producing or holding smolt in net pens in any water body		
A	Take steps to ensure that by June 13, 2017 the farm does not source smolt that was produced or held in net pens.	The hatcheries are all land based that supply this SW site.
8.26 Evidence that carrying capacity (assimilative capacity) of the freshwater body has been established by a reliable entity [171] within the past five years [172, and total biomass in the water body is within the limits established by that study (see Appendix VIII-5 for minimum requirements)		
A	For the water body(s) where the supplier produces smolt for the client (see 8.24b), obtain a copy of the most recent assessment of assimilative capacity.	The hatcheries are all land based that supply this SW site.
B	Identify which entity was responsible for conducting the assessment (8.26a) and obtain evidence for their reliability.	The hatcheries are all land based that supply this SW site.
C	Review the assessment (8.26a) to confirm that it establishes a carrying capacity for the water body, it is less than five years old, and it meets the minimum requirements presented in Appendix VIII-5.	The hatcheries are all land based that supply this SW site.
D	Review information to confirm that the total biomass in the water body is within the limits established in the assessment (8.26a).	The hatcheries are all land based that supply this SW site.
E	If the study in 8.26a is more than two years old and there has been a significant increase in nutrient input to the water body since completion, request evidence that an updated assessment study has been done.	The hatcheries are all land based that supply this SW site.
8.27 Maximum baseline total phosphorus concentration of the water body (see Appendix VIII-6)		

A	Obtain documentary evidence to show that smolt suppliers conducted water quality monitoring in compliance with the requirements of Appendix VIII-6.	The hatcheries are all land based that supply this SW site.
B	Obtain from smolt suppliers a map with GPS coordinates showing the sampling locations.	The hatcheries are all land based that supply this SW site.
C	Obtain from smolt suppliers the TP monitoring results for the past 12 months and calculate the average value at each sampling station.	The hatcheries are all land based that supply this SW site.
D	Compare results to the baseline TP concentration established below (see 8.29) or determined by a regulatory body.	The hatcheries are all land based that supply this SW site.
E	Confirm that the average value for TP over the last 12 months did not exceed 20 ug/l at any of the sampling stations nor at the reference station.	The hatcheries are all land based that supply this SW site.
8.28 Minimum percent oxygen saturation of water 50 centimetres above bottom sediment (at all oxygen monitoring locations described in Appendix VIII-6)		
A	Obtain evidence that smolt supplier conducted water quality monitoring in compliance with the requirements (see 8.27a).	The hatcheries are all land based that supply this SW site.
B	Obtain from smolt suppliers the DO monitoring results from all monitoring stations for the past 12 months.	The hatcheries are all land based that supply this SW site.
C	Review results (8.28b) to confirm that no values were below the minimum percent oxygen saturation.	The hatcheries are all land based that supply this SW site.
8.29 Trophic status classification of water body remains unchanged from baseline (see Appendix VIII-7)		
A	Obtain documentary evidence from the supplier stating the trophic status of water body if previously set by a regulator body (if applicable).	The hatcheries are all land based that supply this SW site.
B	If the trophic status of the water body has not been classified (see 8.29a), obtain evidence from the supplier to show how the supplier determined trophic status based on the concentration of TP.	The hatcheries are all land based that supply this SW site.
C	As applicable, review results from 8.29b to verify that the supplier accurately assigned a trophic status to the water body in accordance with the table in Appendix VIII-7 and the observed concentration of TP over the past 12 months.	The hatcheries are all land based that supply this SW site.

D	Compare the above results (8.29c) to trophic status of the water body as reported for all previous time periods. Verify that there has been no change.	The hatcheries are all land based that supply this SW site.
8.30 Maximum allowed increase in total phosphorus concentration in lake from baseline (see Appendix VIII-7)		
A	Determine the baseline value for TP concentration in the water body using results from either 8.29a or 8.29b as applicable.	The hatcheries are all land based that supply this SW site.
B	Compare the baseline TP concentration (result from 8.30a) to the average observed TP concentration over the past 12 months (result from 8.27e).	The hatcheries are all land based that supply this SW site.
C	Verify that the average observed TP concentration did not increase by more than 25% from baseline TP concentration.	The hatcheries are all land based that supply this SW site.
8.31 Allowance for use of aeration systems or other technological means to increase oxygen levels in the water body		
A	Obtain a declaration from the farm's smolt supplier stating that the supplier does not use aeration systems or other technological means to increase oxygen levels in the water bodies where the supplier operates.	The hatcheries are all land based that supply this SW site.
ADDITIONAL REQUIREMENTS FOR SEMI-CLOSED AND CLOSED PRODUCTION OF SMOLTS		
8.32 Water quality monitoring matrix completed and submitted to ASC (see Appendix VIII-2)		
A	Obtain records from smolt suppliers showing that water quality monitoring was conducted at least quarterly (i.e. once every 3 months) over the last 12 months.	Monitoring the effluent for Dalrymple and Big tree creek is recorded. Ocean Falls effluent discharges into the sea.
B	Obtain water quality monitoring matrix from smolt suppliers and review for completeness.	Results are available as per the requirements.
C	Submit the smolt supplier's water quality monitoring matrix to ASC as per Appendix VIII-2 and Appendix VI at least once per year.	This has been submitted.
8.33 Minimum oxygen saturation in the outflow (methodology in Appendix VIII-2)		
A	Obtain the water quality monitoring matrix from each smolt supplier (see 8.32b).	These results are available. The hatcheries provide oxygen to the growing tanks and monitor the oxygen levels in the outflow at about 90%. This insures good

		oxygenation in the effluent waters.
B	Review the results (8.33a) for percentage dissolved oxygen saturation in the effluent to confirm that no measurements fell below 60% saturation.	All the Oxygen levels were above 60%.
C	If a single DO reading (as reported in 8.33a) fell below 60%, obtain evidence that the smolt supplier performed daily continuous monitoring with an electronic probe and recorder for a least a week demonstrating a minimum 60% saturation at all times (Appendix VIII-2).	All were above 60%.
8.34 Macro-invertebrate surveys downstream from the farm's effluent discharge demonstrate benthic health that is similar or better than surveys upstream from the discharge (methodology in Appendix VIII-3)		
A	Obtain documentation from smolt supplier(s) showing the results of macro-invertebrate surveys.	Reports are available from a third party company who carried out the macro-invertebrate surveys on the relevant discharges.
B	Review supplier documents (8.34a) to confirm that the surveys followed the prescribed methodology (Appendix VIII-3).	Their prescribed methodologies were used.
C	Review supplier documents (8.34a) to confirm the survey results show that benthic health is similar to or better than upstream of the supplier's discharge.	There was reference to benthic communities of important reference invertebrates such as tricoptera and ephemeroptera being present. The major conclusions showed that there was consistent abundances and high species richness both above and below the farm shown no sign of impact. Third party contractor carried out the taxonomy work.
8.35 Evidence of implementation of bio solids (sludge) Best Management Practices (BMPs) (Appendix VIII-4)		
A	Maintain a copy of smolt supplier's bio solids (sludge) management plan and confirm that the plan addresses all requirements in Appendix VIII-2.	Documented Bio solids Management Plan available. Revised January 30th 2014.
B	Obtain from smolt suppliers a process flow diagram (detailed in Appendix VIII-2) showing how the farm is dealing with bio solids responsibly.	There is a flow diagram and map of the sites showing input and waste streams and the sludge collection areas are identified.
C	Obtain a declaration from smolt supplier stating that no bio solids were discharged into natural water bodies in the past 12 months.	This declaration is in the Bio solids Management Plan.
D	Obtain records from smolt suppliers showing monitoring of bio solid (sludge) cleaning maintenance, and disposal as described in Appendix VIII-2.	The disposal of the bio solids are recorded including disposal method and dates of cleaning and disposal. The company who removes is an approved third party contractor, on the 4/13 sludge from marine harvest was brought to approved third party contractor.

July 21, 2014
Attention: Bill Patterson

Joint Submission of the David Suzuki Foundation, the Living Oceans Society, the Save our Salmon Marine Conservation Foundation, and the Watershed Watch Salmon Society on the Marsh Bay ASC Salmon Audit

Dear Mr. Patterson,

Upon review of the draft Aquaculture Stewardship Council (ASC) audit for Marine Harvest Canada's (MHC) Marsh Bay farm site, conducted by SAI Global, it is clear that there are far too many outstanding issues at this site that need to be addressed before the farm can earnestly achieve the standards set out for certification by the Aquaculture Stewardship Council (ASC).

There is a fundamental concern with this audit such that MHC has voluntarily withdrawn their Shelter Bay site from the ASC certification audit due to a major non-conformity, but they have not done so with the Marsh Bay site. We question how current production at the Marsh Bay farm site could earn certification, given that the fish currently being raised there were transferred there from the Shelter Bay site, which was found to be non-compliant with the ASC standard.

Our comments are detailed below with respect to the site's compliance (or non-compliance) with the actual ASC standards as well as with the process itself.

We have sent a copy of our submission to the ASC as well and will be working with them to express our concerns with regards to the auditing process.

We appreciate the opportunity to participate in the certification process and look forward to hearing from you as to how our comments and concerns will be addressed.

Sincerely,

John Werring
Senior Science and Policy Advisor
David Suzuki Foundation

Karen Wristen
Executive Director
Living Oceans Society

Craig Orr
Executive Director
Watershed Watch Salmon Society

Eric Hobson
President
Save our Salmon Marine Conservation Foundation

Overview

In Overview, we have identified the following concerns:

1) Legitimate stakeholders with valid concerns and interest in the outcome of this audit were not adequately notified of the commencement of the audit, nor were they advised of the means by which they could provide the auditor with pre-audit comments or how those concerns would be addressed during the audit. Furthermore, these stakeholders were not notified in a timely fashion that the audit had been completed and that a limited opportunity was available for public comment (in some cases, stakeholders were only notified of the public comment opportunity after 7 of the 10 days for comment had already passed);
2) There is a significant issue with transparency of information related to the Canadian aquaculture industry - especially in British Columbia - such that much of the information that stakeholders would rely on in order to assess industry performance and provide informed comment to ASC auditors is simply not publicly available. This is contrary to the ASC standard which calls for a high level of transparency around farm-level data and monitoring (ASC Salmon Standard - Appendix VI: Transparency of Farm-Level Performance Data). Much of the data that the ASC lists in Appendix VI is not publicly available, and rather than make it so, the company being audited (Marine Harvest Canada) relies on complicated and vague rules around confidentiality of information to keep it out of the public eye. This is especially so where it comes the identification, management, and treatment of parasites and pathogens (Note: The only parasite that the company publicly reports on is sea lice and as is shown in the audit there are even problems with how that reporting is carried out).
3) The audit relies on the ability of the DEPOMOD tool to accurately define a site-specific Allowable Zone of Effect (AZE). We provide contrary evidence to suggest that this model is not accurate in many cases and it is clear from the audit that the company has not taken steps to ground-truth and verify the model in relation to this particular farm (Marsh Bay), despite the farm having been in operation for more than five years.
4) The farm operator has not followed ASC criteria for the measurement of dissolved oxygen and the auditor also does not address whether he was able to fulfill the requirement of witnessing DO monitoring and calibration as required under the standards.
5) The ASC requirements for any jurisdiction without national water quality guidelines includes the weekly monitoring of N, NH_4, NO_3, total P, and ortho-P both on the farm and at a reference site. In this case, the operator is measuring a single element (nitrate, NO_3) arguing that the Canadian Council of Ministers of the Environment have only set guidelines for this one parameter so that is all they need to sample for. We argue that the CCME guidelines do not appear robust enough to satisfy the general ASC requirements and that more robust monitoring is needed to meet the standard.
6) Other sampling criteria and procedures required under the ASC Standards have not been followed including sieving for fines and sampling point locations. Three months of fines sampling results are mandatory for a first audit (2.3.1), but the farm has only completed one test thus far.

7) The ASC standards require evidence of an assessment of the farm's potential impacts on biodiversity and nearby ecosystems (2.4.1). Although such an assessment was carried out in 2009, it was completed well before there was an approved increase in the maximum production level of the farm (a 64% increase over planned 2009 levels) and there is no evidence that a similar assessment, post production volume increase, has been carried out.
8) While the auditor notes that annual rockfish surveys are a requirement under the company`s Pacific Aquaculture Regulations licence to operate, there is no indication that the farm operator has completed these surveys since 2011. There is also a requirement under the farm's license for the operator to do an annual abalone survey. Again, there is no evidence that these surveys have been carried out since 2011.
9) There are notable problems with the farm's public reporting of sea lice data. The company relies on the argument that their contractor did not know what the requirements were. It is our view that before a company undergoes an audit they should be familiar with the terms and conditions of the standards they are being audited against and take all steps to meet those conditions. Ignorance should not be an allowable excuse. Besides, the company has been aware of the issue of public reporting of sea lice rates in BC waters for almost a decade and the fact that there are still problems with how they report and handle that information speaks to the increasing issues related to transparency of information identified in point 2 above.
10) Participation in area-based management is required under the ASC Salmon Standard. To our knowledge Marsh Bay is *not* part of an area-based management scheme. Although the company does engage in area-based management in some parts of its operations (the Broughton Archipelago), the Marsh Bay farm is not included in that ABM framework. We do not believe that reliance on pro-forma, company-wide protocols for managing farms constitutes area-based management as defined under the ASC standard and, as such, this argument in support of meeting this criterion should be rejected.
11) On the matter of collaborative engagement, the ASC standards require a demonstrated commitment to participate in joint research efforts, transparency around site-level data and/or access to sites. While the parent company, Marine Harvest Canada has allowed a brief period of collaborative sea lice sampling of its fish on 2 farms in the past, and has allowed sampling on a few of its farms for a federal/provincial genetics project, it has stalled or withdrawn support for other initiatives that were not advantageous to the company and set-up road blocks to accessing primary data and publishing scientific seminar proceedings on sea lice science. In addition, the industry association it belongs to argued behind the scenes in a procedural battle to avoid releasing disease and parasite data to participants of a federally mandated Commission of Inquiry.
12) No documentation has been presented to demonstrate how the farm is monitoring for sea lice on wild salmonids (3.1.6).
13) No evidence of scientific research completed within the past five years that investigates the risk of establishment of the species within the farm's jurisdiction.
14) No public mention by MHC of "unexplained losses" which is contrary to the ASC standard, even though the auditor acknowledges there have been unexplained losses.
15) The auditor has not completed the calculation to compare antibiotic load despite the requirement under the ASC standard to do so. Although it is a first time audit, if there

has been more than one antibiotic treatment the farm must demonstrate a decrease in amount used over the previous year. According to the auditor these data exist, but no such calculations have been made available.

16) In the interest of transparency to buyers and consumers, the ASC standards require that the farm makes publicly available a list of all therapeutants used during production (5.2.11). There is no transparency on this issue whatsoever in British Columbia. Therapeutant use has never been reported for individual farms in BC, including Marsh Bay.

17) There is a major lack of clarification in sections addressing disease management, monitoring and reporting. The ASC requirements for transparency should compel full descriptions of disease testing and results rather than oversimplified statements that no viruses have been reported.

Detailed Comments on the Issues of Concern

Comments on the process of the assessment

We would like to state that we are disappointed with the overall process of the audit thus far including how stakeholders are initially informed about the audit and then notification once the draft audit is released and is open for public comment. We hope that these concerns are brought to the attention of the ASC given that this is the first attempt at certification of an ASC product in Canada. Here are some additional details about our concerns.

First, even though we had contacted the auditor before the audit began and expressed interest in seeing and commenting on the audit once it was completed, we were only informed of the release of the draft audit report after 7 of the 10 allotted business days for comment had already lapsed. We are deeply concerned that this manner of informing interested stakeholders once an audit is completed does not allow for stakeholders to have adequate time to review and comment on the work of the auditor. We would expect that any and all stakeholders who express interest in the audit process would be informed in a more timely fashion that the draft audit has been released.

Second, while we were told that we could make submissions to the auditors prior to the completion of the audit and release of the report, no information was presented as to how this could/should happen, nor were we advised as to how that information or submitted comments would be considered and addressed in the overall process.

Additionally, we would like to note that in Canada, and especially so in British Columbia, there are significant problems faced by non-industry stakeholders where it comes to accessing and reviewing information on a broad range of finfish aquaculture-related issues including:

- Information on the use of chemicals and therapeutants (the variety used, quantity and timing/location of applications);
- Information on parasites and pathogens and prevalence of those pathogens on farms, including disease outbreaks;
- Information concerning escapes and/or unexplained losses from farms; and

- Information on the impact of farms on the benthic environment, in particular impacts on biodiversity.

Virtually none of this information is made publicly available in any useable format, which is contrary to the ASC's position that transparency of information is a requirement for certification (SAD Standards – Principle 3 – Criterion 3.1). This makes it difficult, or even impossible, for interested stakeholders to provide pre-audit comments to auditors because there is no information available to stakeholders to review and use to generate informed comment.

Third, allowing only 10-business days for public comment on these audits is insufficient and we question the logic of this given that the Marine Stewardship Council allows for a 30-day public comment period following their audits.

We believe relevant stakeholders need to be informed when the 30-day pre-audit period begins and that it is the responsibility of the auditor to make sure they at least contact stakeholders that are affected by this or have expressed interest in the process. Simple Google searches would have identified many of the relevant stakeholders to the auditor given the history of conflict over salmon farming in this region.

Fourth, we see that other ASC salmon assessments (including Tassal Operations Macquaire Harbour and Sheppards Point locations) have actually had stakeholder meetings and we question why this was not done in British Columbia given the history of debate on this issue in this region and the known reality that the first ASC salmon audit was going to be controversial.

Comments specific to the assessment

Principle 2: Conserve Natural Habitat, Local Biodiversity And Ecosystem Function

The audit report describes a major non-conformity pertaining to sampling for both sulphide levels (2.1.2) and faunal index scoring (2.1.3). No data have been provided to indicate that Marsh Bay will be able to meet the requirements of either criterion.

Although previous sulphide sampling results at this site apparently meet DFO requirements, the CAB does not indicate where levels are relative to ASC requirements. Furthermore, previous sampling results do not provide an adequate benchmark for current production practices as they demonstrate compliance to DFO requirements at a lower peak biomass. For this current production cycle, MHC was granted a licence to increase production volume at the Marsh Bay site by 64% (from 2256 mT in 2012 to 3500 mT in 2013), and to achieve this they have added two 120-metre circumference polar circles to the 8-circle array. This will likely have significant impacts on benthic sulphide levels and will likely result in a change in the locations of the sampling stations, making comparisons with previous sampling results next to impossible.

The audit relies on the ability of the DEPOMOD tool to accurately define a site-specific Allowable Zone of Effect (AZE). It is not clear why the farm has been unable to verify or ground truth the modeling results from DEPOMOD prior to achieving peak biomass (2.1.4). The Marsh Bay site has been stocked with fish since January 2014, providing the requisite 6

months of data, which could be used to ground-truth and test the model being used to ensure it is robust and credible. There were also fish stocked in Marsh Bay that were raised through 2011 and harvested in March of 2012, so there would already have been a defined footprint that could have been identified and used to test the model.

As to placing reliance on the model itself, Fisheries and Oceans Canada (DFO - the regulator) has expressed concerns in the past with regards to the reliability of DEPOMOD. Internal DFO emails submitted during the Cohen Commission enquiry provide evidence that compliance with the Finfish Aquaculture Waste Control Regulations had fallen in the past couple of years. In an email dated September 12, 2010 submitted to the Cohen Inquiry it is stated that: " ... ***the DEPOMOD model was not identifying the areas of highest waste concentrations***; problems were found on about 25% of farms." While anecdotal, this indicates that the reliance on a relatively simple model, which in this case was attributed to prediction based on aged current information that (from the same email) " do not necessarily reflect the present footprint reality". The auditor should be made aware of this uncertainty. Clearly, it would not be valid to conclude that the DEPOMOD accurately defines a specific site's footprint, hence the need to ground-truth and verify the model's predictions.

There is further (minor) non-conformity with the farm's sampling of dissolved oxygen (2.2.1). Increased sampling at reference sites did not follow low dissolved oxygen levels (below 70%) in September/October 2013 as specified by the ASC standard. The audit report also indicates the existence, but not the frequency or magnitude of low DO events between December 17-23, 2013 and the time of the audit, stating that no low DO events have occurred since the audit. No reference site sampling has been provided for any low DO events. The auditor also does not address whether he was able to fulfill the requirement of witnessing DO monitoring and calibration; given the inability to witness calibration of counting machines (3.4.2) due to the lack of a well boat, it unlikely either procedure was witnessed.

Criteria 2.2.3-2.2.4 relate to national water quality guidelines and the status of the farm site environment. The audit report states that the Canadian Council for Ministers of the Environment (CCME) has set quality guidelines for seawater, with nitrate as the only measurable target and the Marsh Bay site considered "very good" quality. The ASC requirements for any jurisdiction without national guidelines include the weekly monitoring of N, NH_4, NO_3, total P, and ortho-P both on the farm and at a reference site. The CCME guidelines do not appear robust enough to satisfy the ASC requirements; only one target is measured, there is no indication of weekly nitrate monitoring on the farm or at a reference site and no date is provided for the third party expert report on the area.

Other sampling criteria and procedures that have not been followed include sieving for fines and sampling point locations. Three months of fines sampling results are mandatory for a first audit (2.3.1), but the farm has only completed one test (along with three months of pooled samples). Sampling stations for all benthic monitoring at the farm are at 25 m and 125 m, rather than following the ASC guidelines. The difference in position between actual sampling stations (125 m) and sampling stations required under the ASC standards

(55 m) are highly likely to lead to different results for most testing and should not be allowed by the CAB.

The ASC standards require evidence of an assessment of the farm's potential impacts on biodiversity and nearby ecosystems (2.4.1). The audit response states that a Canadian Environmental Assessment Agency (CEAA) report was completed in 2009, but does not give any indication that it contains, at a minimum, the components outlined in the standard. Further, this CEAA assessment was conducted when the farm was only permitted for a maximum production volume (2,256 mT) that is 64% less that the currently permitted production volume (3,500 mT). The rational and results of a secondary environmental assessment considering the potential impact of this increase in production volume have not been made public.

Furthermore, the farm is located in a Rockfish no-take zone. Annual rockfish surveys are required under the PAR licence, but it is not clear what evidence has been presented to support the selected exemption (2.4.2 option 2), establishing that the farm's environmental impacts are compatible with the conservation objectives of the Rockfish no-take zone. This should also be challenged because it has been determined in British Columbia that salmon aquaculture is a 'fishery' (Hinkson Decision) and only certain types of 'fisheries' are permitted in RCAs; salmon aquaculture is not on the permitted list. The farm has not met the burden of proof to demonstrate that it is not negatively impacting the core reason an area that has been identified as high conservation value. And while the auditor notes that annual rockfish surveys are a requirement under the PAR license, there is no indication that the farm operator has completed such surveys since 2011. There is also a requirement under the farm's license for the operator to do an annual abalone survey (indicator 1.1.1). Likewise, no evidence has been provided that these surveys have been carried out and there are no data provided after 2011.

When assessing the farm under Criterion 2.5.4, the auditor should consider the previous twelve-month period when the farm was active, not a calendar year. The Marsh Bay farm appears to have been inactive from April 16, 2012 – January 2014. If this were taken into account at Marsh Bay, then the lethal actions taken in April 2012 (accidental drowning of one and authorized control on two California sea lions) would have to be considered in the audit, thereby disqualifying Marsh Bay. Furthermore, there is email evidence in the response to an ATIP request that MHC was delinquent (non-compliant with the conditions of their license) when filing the full report of the incident in April 2012 (see appendix A, p. X).

<u>Principle 3: Protect The Health And Genetic Integrity Of Wild Populations</u>

The audit report assessed a minor non-conformance for farm reporting of sea lice data falling outside of the 8 weeks as permitted (3.1.6). Although MHC has claimed that a new webmaster will speed up the release of this data, it is especially concerning given the notification of their inability to comply with 3.1.7. The level of adult lice with eggs on July 28, 2013 was 0.176 and exceeded the 0.1 level allowed under the standard. (The Marsh Bay site was inactive during July 2013; it is assumed that the lice count refers to monitoring at Shelter Bay and is included as these same fish were subsequently split into Marsh Bay.) The

auditor claims that this was the only time the farm exceeded the 0.1 level on a count basis, but without transparent and timely data it is not possible to ensure compliance. This further raises concern as to the magnitude and frequency of non-compliance since lice levels are only reported in the summary of evaluation results; although the high count should be, it is not flagged as a non-conformity (minor or major) or listed among the detailed findings.

The Marsh Bay farm does not participate in Area Based Management, which is justified in the audit report by the fact that Marine Harvest owns all neighboring farms (3.1.1). Although fallowing and treatment procedures may be followed by MHC, this is insensitive to biological realities: "There is no requirement under DFO for a single company to manage an area for fallowing, Treatments etc. However there is an element of this done within the company." (from draft). "Area-based management" within the company is not area-based management as specified by the ASC standards. All preliminary modeling work (Mike Foreman, DFO) seems to indicate that both lice and especially viruses travel farther than people had originally thought, and that farms on large sections of the coast may indeed function as a single disease meta-population. The need for area-based management is very real, especially in the context of emerging pathogens. The absence of an ABM means that auditor responses for other related criterion, such as 3.1.3 (Establishment and annual review of a maximum sea lice load for the entire ABM and for the individual farm), do not satisfy the ASC requirements.

Although Marine Harvest states that no collaboration efforts have been rejected (3.1.2), there is a commitment to research required that intends to ensure that farms are working with researchers and regulators to address the many gaps in understanding around a farm's interaction with wild populations. A demonstrated commitment means that the farm is participating in joint research efforts. Although funding of research is encouraged, transparency around site-level data and/or access to sites is seen as an extremely valuable contribution to scientific research and is, therefore, the requirement. At a minimum a farm or operating company must demonstrate this commitment through providing farm level data to researchers and granting researchers access to sites. No evidence has been provided to demonstrate engagement of this kind. One researcher from the University of Toronto has relayed information about being banned from sampling the water outside of a MHC farm's boundary. The University of Toronto was sent a cease-and-desist letter, initially citing "biosecurity" as one of the reasons that they shouldn't be allowed to conduct the sampling, although the rationale was quickly changed to "student safety." Incidents such as this are not uncommon and the auditor should be made aware of the unwillingness of MHC to fully engage with and provide transparent data to the research community.

No documentation has been presented to demonstrate how the farm is monitoring for sea lice on wild salmonids (3.1.6). Sampling methodology should be made available for comparison to the requirements outlined in Appendix III-1. The audit report states "MHC monitoring the outmigration fish in the Goletas Channel near Port Hardy. The first nations are involved and Pacificus Biological Services. This has been taking place for a number of years". A document outlining on farm testing procedures is mentioned earlier in the report (3.1.4 C Sea lice monitoring - Marine sites SW 822 April 2012 describes the SOP for lice

monitoring in MHC and the sites have ID charts), but no equivalent SOP is mentioned for wild salmonid monitoring. Monitoring the outmigration is not the same as monitoring of sea lice on wild fish and the referenced response is not sufficient evidence for the auditor to evaluate the methodology.

Farms producing a non-native species must comply with several relevant standards. Criterion 3.2.2 requires the farm to "provide evidence of scientific research completed within the past five years that investigates the risk of establishment of the species within the farm's jurisdiction". The audit report describes research from 1990-2004 and MHC surveys from 2010 (following an escape event), and states that a report will be submitted before 2017. None of the data provided are sufficient to meet the letter or spirit of the standard.

The farm is required to make unexplained losses publicly available (3.4.3). No large escape events have been reported, but there is a discrepancy within the audit report of the percent of unexplained loss. In the summary of Principle 3 (page 10) "There was a 5.5% unexplained difference in the previous production cohort but this has been explained by the large number of predator attacks and the variance in counting due to a 2% +/- error allowed in the counting machines" while in section 3.4.3 (page 33) "For the previous estimates there was a 1.4% difference. This is within the 2% error of the counting machine. There was no indication of escapes." There is a considerable difference between the two values provided and without the auditor witnessing calibration of the counting machine, there is concern about verification of the data. It is possible that trickle escapes are responsible for some unexplained losses and is not addressed at all in the audit report. In addition, there has been no public mention by MHC of these "unexplained losses" which is contrary to the ASC standard.

Principle 4: Use Resources In An Environmentally Efficient And Responsible Manner

The marine species used for raw feed ingredients must be known in detail to evaluate whether a farm complies with criterion 4.3.2 (Fish Source score [68] for the fishery(ies) from which all marine raw material in feed is derived). Only two species are indicated in feed use (Mexican anchoveta and menhaden), which seems unlikely for feed use over an entire production cycle. With no FishSource scores available from Mexican anchoveta and no data regarding the proportion of feed from each listed fishery, it is possible for the majority of raw marine ingredients to originate from a stock that does not meet the standard.

Principle 5: Manage Disease And Parasites In An Environmentally Responsible Manner

ASC requires the CAB to calculate the antibiotic load (5.2.10 antibiotic load = the sum of the total amount of active ingredient of antibiotic used in kg) for one full production cycle immediately prior to the current cycle during a first audit. The farm is at the antibiotic treatment limit (3) in an unfinished production cycle and has not indicated whether the current antibiotic load (unspecified amount) is at least 15% less than the previous production cycle (from which the auditor reports active ingredient use of 92.36 kg). A demonstrated 15% decrease in use is a requirement for any farm using more than one

antibiotic treatment during a given production cycle. The audit report states that the criterion is not applicable due to the first time audit, but the standards outline clearly that the requirements are applicable for first time audits and are more rigorous for subsequent audits. The calculation is possible and should be performed to verify the farm meets the 15% reduction necessary to meet the standard.

In the interest of transparency to buyers and consumers, ASC standards require that the farm provide a list of all therapeutants used during production (5.2.11). MHC circumvents this requirement by supplying customers with an annual letter outlining potential treatments, rather than what has been used during a given production cycle. Disclosure should be specific and relevant to the fish a buyer is purchasing.

The audit section on fish health management and disease reporting is inadequate (5.1.1 and 5.4.2). The fish health management plan referenced is for the entire Marine Harvest Canada organization and it covers freshwater as well as marine sites; it is unlikely to account for local conditions and concerns as the standard requires. Statements like "There have been no viruses detected" don't make sense without knowing what viruses are screened for prior to fish being transferred into the marine environment. The following statement is also not logical: "There is only one suspected unidentifiable transmissible agent in the locality and that is Piscine Reo Virus (PRV) which has been tentatively been linked to Heart and Skeletal muscle inflammation disease in Europe, however HSMI disease has not been reported to exist in British Columbia." This statement would suggest that the preceding statement that "There have been no viruses detected" is erroneous and misleading.

<u>Principle 7: Be A Good Neighbor And Conscientious Citizen</u>

The audit report identifies a minor non-conformance regarding farm relations with the local community (7.1.1). Minutes from a community meeting were not available and only outlined attendance and questions raised without any responses from MHC. Community engagement activities listed on the audit report appear to be one sided (e.g. details on new technology, Therapeutic Treatments, opportunities for future growth and information regarding certification) and do not demonstrate two-way communication or meaningful engagement. No interviews were conducted with local community or First Nations to verify the information presented to the auditor by MHC regarding interactions, and the First Nations representative planned to attend during the audit process was unavailable (7.2.1).

Further evidence of non-engagement with the community can be seen in criterion 7.1.3. The farm is required to post notices during therapeutic treatments visible to those passing the farm (i.e. fishermen on the waterway and other affected stakeholders). The draft report states that the notices are posted on the sides of the cage and are visible to those entering the cage site. For community members concerned about potential health risks associated with therapeutic treatments, it does not seem that cage-side notice is sufficient.

Living Oceans Society (LOS) raised concerns about impacts on access to resources during the CEAA screening process, as did the Regional District of Mount Waddington area Director (7.3.2). Access to resources is considered to be a Valued Social Component (VSC)

in the assessment process. LOS also raised concerns about impacts from the project on Valued Ecological Components (VEC) such as wild fish populations. The significance of the residual effects on these VECs was considered to be "Intermediate" based on scientific information available at the time and at the levels of production used in scoping the assessment. LOS (on behalf of CAAR) raised additional concerns during the in-house DFO Aquaculture Management assessment of the 2011 application to increase production levels at this site. There was no CEAA screening of this increase. From information obtained through an ATIP request, these additional concerns appear to have only been addressed by MHC and not by DFO science branch. This information (and the screening report) can be made available to the auditor.

Section 8: Requirements For Suppliers Of Smolt

Marine Harvest's land-based hatchery sites do not comply with allowable effluent discharge levels (8.1). Hatchery sites regularly exceed nitrate and phosphate limits, but the audit states that there will be no enforcement by the Ministry of Environment as long as there is continuous improvement. MHC hatcheries are not conforming to water quality limits and because of the lack of government enforcement, the ASC assessment should consider this non-conformance with the standard.

Criterion 8.4 limits the amount of phosphorus that can be released by a hatchery into the environment measured in kg P/mT biomass produced. The audit states that the hatchery discharge is currently 3.67 tons of phosphorus per ton produced, exceeding the standard of 5 kg/mt of fish produced over a 12-month period by several orders of magnitude. If there were an error in this calculation, it would be useful to have access to data for any other calculated values in order to verify accuracy.

Appendix A: Evidence of MHC non-compliance with its Conditions of License, as received in a request under the Access to Information and Privacy Act.

s.19(1)

Michalko, Linda

From: Andres, Byron
Sent: Thursday, August 30, 2012 3:08 PM
To: 'Opala, Richard';
Cc: Grebeldinger, Erika; Taccogna, Gary
Subject: FW: Email to richard

Hi Richard,
I am forwarding the below letter from Erika for your immediate attention.
Please note that the failure to provide the requested details also constitutes an instance of non-compliance as the detail in the Conditions of Licence and in the reporting template is quite clear.
Erika has sent youa letter seeking this information previously and this was also discussed with you in detail at a meeting between yourself, Greg Plummer, and myself at our offices in Campbell River.
Please provide the detail as required by Condition of Licence.
Your prompt attention to this matter is appreciated.

Byron Andres
Senior Biologist | Biologiste Superieurs
Aquaculture Environmental Operations | Aquaculture operations de l'environnement
Fisheries Management | Direction des Peches
Fisheries and Oceans Canada | Pêches et Océans Canada
8585 Wollason Street, Port Hardy, B.C. V0N 2P0 | 8585 Rue Wollason, Port Hardy C.-B. V0N 2P0
Byron.Andres@dfo-mpo.gc.ca

Telephone | Téléphone 250-949-6450
Facsimile | Télécopieur 250-949-6755
Government of Canada | Gouvernement du Canada

From: Grebeldinger, Erika
Sent: August 30, 2012 2:53 PM
To: Andres, Byron
Subject: Email to richard

Hi Richard,

We still have not received any of the requested information from previous email correspondence. We are required to summarize marine mammal authorized kills and marine mammal incidents for public reporting and need to do this as soon as possible. From your marine mammal authorized kill report for Marsh Bay April 14, 2012 it is not clear how many and what species of sea lion were killed as a result of the "2 sea lions" entering pens on site. Please send us this information right away.

Thank you,

Erika

Erika Grebeldinger
Biologist | Biologiste
Aquaculture Management Division | Gestion de l'aquaculture
Fisheries Management | Direction des Peches
Fisheries and Oceans Canada | Pêches et Océans Canada
8585 Wollason Street, Port Hardy, B.C.V0N 2P0 | 8585 Rue Wollason, Port Hardy C.-B. V0N 2P0
Erika.Grebeldinger@dfo-mpo.gc.ca

Telephone | Téléphone 250-949-6456
Facsimile | Télécopieur 250-949-6755

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Appendix 2 Stakeholder Submissions

SAI Global Response

Jenna Stoner
Sustainable Seafood Campaign Manager
Living Oceans Society
204-343 Railway St.
Vancouver BC,
V6A 1A4

1 December 2014

Ref Marsh Bay ASC Salmon Audit

Dear Jenna,

Thank you for the joint submission letter from The David Suzuki Foundation, the Living Oceans Society, the Save our Salmon Marine Conservation Foundation, and the Watershed Watch Salmon Society.

We have addressed the items considered in the submission in a sequential manner.

Covering letter

The covering letter second paragraph refers to the voluntary withdrawal of the Shelter Bay site, this site's withdrawal from the certification programme has no bearing on the Marsh Bay application, both farm sites are separate applications. The incident at Shelter Bay occurred post fish transfer and is not relevant to the Marsh Bay application.

We note your submission of a copy of the letter to the Aquaculture Stewardship (ASC) Council; as a Certification Body we are not in a position to comment on the standard requirements commentary within the submission.

Overview

1. The announcement of the farm entering into certification was posted on the ASC website as per the programme requirements. Prior to the audit, members of the David Suzuki Foundation were in contact with the certifier and were invited to make a submission if they so wished. There is no requirement within the ASC programme to notify stakeholders when the audit report is uploaded for the public comment period of 10 days; however, the certifier notified the David Suzuki Foundation. The certifier will continue to notify interested stakeholders of the upload of the draft report.

2. The requirements of the ASC programme for transparency and submission of evidence to ASC were complied with; where specific indicators require public disclosure by the ASC standard these were complied with.

3. The indicator clause 2.1.4 comes into effect within three years of the date of publication of the standard .This globally recognised modelling tool was developed by CEFAS in Scotland. It was adopted by British Columbia. DFO accepts this tool.

4. The farm is in compliance with dissolved oxygen requirements and this was verified by the auditor in the course of the audit.

5. The indicator 2.2.3 does not state how stringent the requirements have to be, just that they exist, which they do. The indicator requires a third-party analysis of water quality in the area, which was available and was reviewed by the auditor. The standard does not set parameters/metrics for jurisdictions without water quality targets, indicator 2.2.4.

6. The farm is in compliance with this requirement having completed a composite sample of the feed batches for farm sites seeking initial certification.

7. The farm is in compliance with its current licence requirements.

8. The farm is in compliance with its current license requirements and the auditor viewed the required rockfish and abalone surveys, both conducted in 2013. Surveys for previous years were available as well.

9. Marine Harvest Canada publicly reports sea lice data as required by the standard.

10. There are no other companies operating in this region so this requirement is not relevant. The stakeholder submission acknowledges that, where required, the applicant does participate in area based management programmes.

11. The auditor viewed evidence that confirmed the applicant was involved in valid collaborative engagement and all legitimate enquiries are considered and responded to.

12. The farm is in compliance with this requirement, the auditor viewed an independent report on sea lice monitoring on wild salmonids. The 2013 report was available on the MHC website during audit and a 2014 report is now posted.

13. Performance indicator 3.2.2 is a future requirement. Evidence needs to be presented within 5 years of the publication of the Salmon Standard (June 2017).

14. Unexplained losses cannot be fully calculated until the farm is completely harvested.

15. Performance indicator 5.2.10 is a future requirement. Evidence needs to be presented within 5 years of the publication of the Salmon standard (June 2017).

16. The applicant provides information to buyers as defined in note 113 of the standard.

17. All of the required information was available during audit and all ASC transparency requirements were met.

Detailed Comments on the Issues of Concern

Many of the discussion points within the detailed comments of concern have been addressed in the overview commentary above, however we respond as follows:

Page 4 Paragraph commencing “First” - the auditor had not been contacted, the certification body representative was contacted. There is no explicit requirement to inform stakeholders directly of the publication of the draft report via the ASC website. The certification body welcomes the comments and will ensure they are taken in to account in future audits.

Stakeholder should note the option of signing up to the ASC website to receive automatic updates of any changes.

Page 4 Paragraph commencing “Second” - the following is an extract from an email to a stakeholder outlining the options:

"Under the ASC programme there is no fixed model re stakeholder engagement it can be via written submission, comment on the draft report when published meeting the assessment team on site.
So the method of engagement is optional depending on the stakeholder request."

Page 5 Paragraph commencing "Third" - this timeframe is the standard ASC requirement.

Page 5 Paragraph commencing "Fourth" - stakeholder meeting are one of a number of options for stakeholder contributions.

Principle 2 comments:

With respect to sulphide sampling, DFO requirements for outside the AZE are more stringent than ASC and the applicant was in compliance with both.
With respect to the DEPOMOD tool, we refer to our response in overview item number 3: "This globally recognised modelling tool was developed by CEFAS in Scotland and adopted by British Columbia. DFO accepts this tool".
With reference to dissolved oxygen, the auditor fulfilled the requirements of the standard and witnessed the required elements of the standard. The auditor also reviewed numerous procedures including calibration of count machines.

For sampling of fines, please refer to overview item number 6 above: "The farm is in compliance with this requirement having completed a composite sample of the feed batches for farm sites seeking initial certification."

The benthic sampling was conducted as per an approved variation request.

Page 7:
The first two paragraphs on page 7 are covered in our response to overview item number 8: "The farm is in compliance with its current license requirements and the auditor viewed the required rockfish and abalone surveys both conducted in 2013. Surveys for previous years were available as well."

With respect to time periods, these are typically based on consecutive twelve month period.

Principle 3:

Each individual application is treated in its own right and the Marsh Bay data is for the site only, on an average basis the site's sea lice counts are satisfactory.

In relation to the commentary on area based management, there are no other companies operating in this region so this requirement is not relevant. The stakeholder acknowledges that, where required, the applicant does participate in area based management programmes.

Where relevant to the company, Marine Harvest is willing to work in collaboration. The auditor viewed evidence that confirmed the applicant was involved in valid collaborative engagement and all legitimate enquiries are considered and responded to.

Comments about the University of Toronto sampling were followed up with the applicant, who stated: "We expect researchers to contact us and get our consent prior to commencing their work as a common courtesy. In this case, the researchers neither communicated their project nor sought authorization. Our concerns were for both biosecurity and student safety

and both are valid. We offered to provide safety training to lift the cease and desist but the University of Toronto declined." The farm is in compliance with the requirement to monitor sea lice on wild salmonids and the auditor viewed an independent report on wild salmonid monitoring. The 2013 report was available on the MHC website during audit and a 2014 report is now posted.

Performance indicator 3.2.2 is a future requirement. Evidence needs to be presented within 5 years of the publication of the Salmon standard (June 2017).

Unexplained losses for the current farm stock cannot be fully calculated until the farm is completely harvested. The reference in the report is clearly for the previous production cohort and was explained.

Principle 4:
The auditor reviewed the data provided by the feed company and verified its accuracy with Fishsource as per ASC requirement.

Principle 5:
The 15% rule is within the 5 years of the publication of the standard. The farm is in compliance with the current standard requirements.

The applicant has a system in place to provide buyers with the required information and this was verified by the auditor.

The fish health management plan and disease reporting was found to be in compliance with the standard requirements and comprehensive in nature.

Principle 7:

The auditor viewed records of the meeting and determined that for future meetings more detailed records are required. The auditor raised no concerns in respect of two way communication. The First Nation's representative was due to attend but was unavailable.

Notices of therapeutic treatments are posted in accordance with the standard requirements.

Section 8:
The auditor reviewed the data provided in respect of the various requirements within section 8. In respect of Criterion 8.4, there are no values declared in the report.

Appendix A:

With regards to the emails received under the Access to Information and Privacy Act, the applicant provided their original submission to government during audit and has subsequently provided their email response (sent August 30, 2012) to the August 30, 2012 emails from Fisheries and Oceans Canada. These documents demonstrate that conditions of license were met.

The full submission letter and the SAI Global response will be included in the report as required under ASC procedures.

I trust the above clarifies the matters in your submission.

Yours sincerely

Bill Paterson
Operations Manager

Appendix 2 Stakeholder Submissions