



MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY  
**PESTICIDE USE PERMIT**  
**No. 869-0008-18/21**

*Pursuant to Section 6 of the Integrated Pest Management Act*

Marine Harvest Canada Inc.  
124 1334 Island Highway  
Campbell River, B.C.  
V9W 8C9

is authorized to use pesticides subject to the conditions **1** through **33** listed below. Contravention of any of these conditions is a violation of the *Integrated Pest Management Act* and may result in prosecution.

**Purpose of the Permit**

1. This permit has been issued for the management of post-chalimus stage sea lice (*Lepeophtheirus spp* and *Caligus spp*) on farmed Atlantic salmon at 6 separate aquaculture facilities within the Quatsino Sound Region of Vancouver Island (Cleagh Creek, Monday Rocks, Koskimo, Mahatta East, Mahatta West, and Thorpe Point) as shown on the attached maps), using the pesticide Interlox Paramove 50 (active ingredient hydrogen peroxide) administered using the well boat or tarpaulin treatment methods. This use is authorized as part of an integrated pest management program for sea lice management, and is necessary as part of an effective resistance management strategy for chemotherapeutant use at these sites.

**Treatment Dates**

2. The pesticide use described herein may be conducted from 10 days after the date of publication of the permit as described in Condition **4** until the permit expires on **June 22<sup>nd</sup>, 2021**.

Date Issued: June 22, 2018

Andreas Wins-Purdy, P.Ag.



### Notifications and Access to Project Information

3. To allow inspection by the public, within seven days of permit issuance, the permit holder shall post a copy of the permit on the Marine Harvest Canada Ltd. website, and make a copy available for viewing by any member of the public at the Marine Harvest Canada office at 124 1334 Island Highway, Campbell River BC. The permit shall remain accessible at these locations as described above until one week after the permit has expired.
4. Within 15 days of issuance of the permit, the permit holder shall publish a notice in at least one community newspaper whose area of circulation includes the treatment area and proximal communities. The published notice shall contain the following information:
  - (a) Name, address and telephone number of the permit holder,
  - (b) Permit number,
  - (c) Purpose of pesticide use,
  - (d) Pesticide(s) to be used (trade name, P.C.P. No. and active ingredient),
  - (e) Method of pesticide application,
  - (f) Map(s) showing the location of the treatment area,
  - (g) Projected dates of project commencement and completion,
  - (h) Information on where copies of the permit and map of the treatment area may be examined in detail,
  - (i) Information on how and when the public can contact the permit holder to obtain any permitted pesticide use and related integrated pest management information.
5. The permit holder shall also conduct any additional notification agreed upon during the consultation process in the manner agreed upon with the parties to be notified.
6. At least 24 hr hours prior to any pesticide use, signs advising of the upcoming pesticide use shall be posted at the access points to each facility being treated. These postings shall be maintained for the duration of the pesticide use. The signs shall be waterproof and a minimum of 279 mm by 432 mm in size (i.e. 11" x 17") in size. Each sign shall have the heading "Pesticide Use Notice" (in 2.5 cm lettering) and contain at least the following information:
  - (a) The trade names and active ingredients of each pesticide to be used.
  - (b) The date or range of dates for the pesticide use.
  - (c) Precautions to be taken by all employees needed to minimize exposure to the pesticides and residues.
  - (d) The Pesticide Use Permit number.
  - (e) How to obtain additional information about the pesticide or pesticide use.

Date Issued: June 22, 2018

Andreas Wins-Purdy, P.Ag.



7. Detailed information on the proposed, current and past pesticide use under this permit shall be made readily available to any member of the general public that may wish to access or use the general area adjacent to the treated areas. Treatment information must be of sufficient detail to allow the accurate delineation of areas where pesticide use has occurred.
8. All personnel involved in the project shall be notified of this permit, provided a copy of the permit, and be familiar with the terms and conditions of the permit and any permit amendments prior to any pesticide use.
9. At least 5 days before a planned tarpaulin treatment, the permit holder must notify the ministry of the upcoming treatment via email to [ipmreporting@gov.bc.ca](mailto:ipmreporting@gov.bc.ca). The notification must include the following information:
  - a) Pesticide Use Permit number
  - b) Date(s) of planned treatment
  - c) Alternate date(s) of treatment (if applicable)
  - d) Location of treatment
  - e) Number of pens to be treated
  - f) Name and phone number of contact person for the treatments


#### Authorized Pesticides

10. The pesticide listed below is approved for use under the terms of this permit. Lowest effective application rates must be utilized where treatment objectives may still be achieved.

Trade Name	Active Ingredient (a.i.)	Product P.C.P. No.	Application Rate of Interox Paramove 50 (gm/l)	Maximum Total Number of Treatments (per pen per year)	Maximum Number of Tarpaulin Treatments (per pen per year)
Interox Paramove 50	Hydrogen Peroxide	31393	2.4 -3.6	6	2

As per the above table, the permit holder is authorized to conduct a maximum of two Interox Paramove 50 treatments per pen per year using the tarpaulin method. The total number of treatments authorized under the terms of this permit (using either the tarpaulin or well boat methods), is six treatments per pen per year.

Date Issued: June 22, 2018

  
Andreas Wins-Purdy, P.Ag.





### Target Pest Species, Treatment Area and Purpose

11. Pesticide use shall be for the sole purpose of treating post-chalimus stage sea lice (*Lepeophtheirus spp* and *Caligus spp*) on farmed Atlantic salmon at the 6 locations identified on the maps accompanying this permit.

### Integrated Pest Management Requirements

12. The permit holder shall make all reasonable efforts to remove moribund fish as necessary.
13. The permit holder shall follow the procedures outlined in the “Marine Harvest Integrated Pest Management Plan” (Marine Harvest Canada, December 19, 2017) document for correctly identifying sea lice and monitoring populations of *Lepeophtheirus spp* and *Caligus spp*. The permit holder shall ensure that the “Marine Harvest Integrated Pest Management Plan” is kept current throughout the duration of the permit.
14. The permit holder may conduct a pesticide application under the following circumstances:
  - a) Once a pre-established threshold of motile *Lepeophtheirus* sea lice per fish per site has been exceeded. This may be a threshold required to maintain compliance with the company’s Marine Finfish Aquaculture Licence under the *Fisheries Act*, it may be established by the veterinarian responsible for fish stock health to achieve management objectives, or it may be established as part of an Area Based Management Plan.
  - b) When treatment of sea lice is deemed necessary by the veterinarian responsible for fish stock health to prevent the infestation of a site when fish are being moved between pens, or for other management objectives.
15. After each pesticide application, the permit holder must conduct a post-application monitoring of sea lice populations in accordance with the permit holder’s “Marine Harvest Integrated Pest Management Plan” (Marine Harvest Canada, December 19, 2017) document to determine the effectiveness of the pesticide application.
16. The permit holder must undertake ongoing research efforts to investigate the feasibility of additional sea lice control methods, including, but not limited to, the use of mechanical removal technology, cleaner fish, and freshwater treatments.

Date Issued: June 22, 2018

Andreas Wins-Purdy, P.Ag.



## Restrictions and Monitoring

17. Releases of pesticide-treated waters from well boats shall occur only while the vessel is in motion, and in locations that are within eight kilometres of the aquaculture facility but at least 200 m away from shore, in order to minimize any potential impact on non-target organisms.
18. For all well-boat applications, the permit holder must employ a filtration system and make reasonable attempts to recover dislodged sea lice during treatment.
19. For all tarpaulin applications, the permit holder must employ a sea lice recapture device, consisting of a collection trough, water pumps, and a screen to capture dislodged sea lice, and make reasonable attempts to recover dislodged sea lice during treatment.
20. The permit holder must visually monitor for any potential impacts to non-target organisms during the release of pesticide-treated waters from either the well-boat or tarpaulin treatment methods.
21. For tarpaulin treatments only, water sampling must be conducted to determine levels of hydrogen peroxide in the water both inside and outside the pen, at various times post-treatment, in accordance with the "Marine Harvest Canada Standard Operating Procedure – Hydrogen Peroxide (Interlox Paramove 50) Monitoring in Seawater – Marine sites" document (Marine Harvest, September 2017). This document must be kept current throughout the duration of the permit.

### Number of samples required

For each location, depth, and time described below, one water sample is required.

### Depth of samples

For each sample location, water samples within the pen must be taken at two different depths: 1 m and 5 m. For each sample location, water samples outside of the pen must be taken at three different depths: 1 m, 5 m, and 20 m.

### Timing of sampling

Both within and outside of the pen, samples at each sampling location and depth must be collected at regular intervals of not more than 30 minutes post-treatment, to document the clearance of hydrogen peroxide from in and around the pen. Sampling at each location and depth may stop once a "not detectable" result is obtained.

Date Issued: June 22, 2018

Andreas Wins-Purdy, P.Ag.



### Location of samples

Within the pen, the sample locations may be chosen by the permit holder. Outside of the pen, water samples will be taken at the outside edge of the treated pen (at the three depths of 1 m, 5 m, and 20 m) and at the edge of the Proposed Pesticide Drift (PPD) zone, as indicated on the maps attached to this permit (samples also taken at the three depths of 1 m, 5 m, and 20 m). The location of sampling at the edge of the PPD will align with the direction of the prevailing current. If hydrogen peroxide is detected at any location or depth, sampling will be repeated at regular intervals of not more than 30 minutes until a 'not detectable' result is obtained. In addition, if hydrogen peroxide is detected at the PPD edge, an additional sample location 45 m beyond the PPD must be added. Sampling at this location will continue at regular intervals of not more than 30 minutes until a 'not detectable' result is obtained.

22. Pesticide use must be conducted under the direction of a provincially-licensed veterinarian, by applicators with valid certificates in the *marine aquaculture* category, and in accordance with any additional treatment-specific training required by the pesticide manufacturer.
23. The permit holder must ensure that a copy of the certificate of all certified applicators conducting the pesticide use is at or near the treatment location during the pesticide use.
24. The permit holder must comply with the requirements of the label for the pesticide used.
25. The permit holder must comply with all applicable regulations under the *Integrated Pest Management Act*.
26. This permit is not transferable without the written approval of the Administrator.

### **Record Keeping**

27. For each treatment location and day of pesticide use under this permit, the permit holder must keep a record containing the following information:
  - a) the treatment location
  - b) the name and certificate number(s) of the pesticide applicator certificate holder(s) who used the pesticide
  - c) the date and time of the pesticide use
  - d) the pre- and post-treatment sea lice monitoring results
  - e) the specific threshold and/or justification for the pesticide application determined by the veterinarian responsible for fish stock health
  - f) the trade name of the pesticide used and its registration number under the federal Act

Date Issued: June 22, 2018

Andreas Wins-Purdy, P.Ag.





- g) the method and rate of application and the total quantity used
- h) the water temperature and direction of the tide at the time of the release of treated water from the well boat (if applicable)
- i) direction and speed of the well boat at the time of release of treated water (if applicable)
- j) the distance from shore of the well boat at the time of the release of treated water (if applicable)
- k) The details of impacts (if any observed) on non-target organisms during the release of pesticide-treated waters
- l) For tarpaulin treatments only, the results of the water monitoring requirements specified in condition 21.

## Reporting

28. An annual report for each calendar year of pesticide use under this permit shall be sent via email to [ipmreporting@gov.bc.ca](mailto:ipmreporting@gov.bc.ca) on or before January 31<sup>st</sup> of the next calendar year. The report shall include the following information:

- The total quantity of Interlox Paramove 50 used in the calendar year at all sites.
- For each aquaculture facility site treated with Interlox Paramove 50:
  - Date or date range of treatments, if treatments for one site were conducted over multiple days
  - For wellboat treatments, total number of wellboat loads
  - For tarpaulin treatments, total number of pens treated
  - Average load biomass (kgs)
  - Pre-treatment sea lice levels
  - Post-treatment sea lice levels
  - % efficacy of the treatment
  - Total volume of water treated
  - Total quantity of Interlox Paramove 50 used
  - For tarpaulin treatments, the results of the water monitoring requirements specified in condition 21
- A summary statement indicating what, if any, effects on non-target organisms were observed during any of the treatments.
- A summary of the sea lice re-capture efforts conducted, including an estimate of the percent of dislodged sea lice captured for all treatments.

Date Issued: June 22, 2018

Andreas Wins-Purdy, P. Ag.



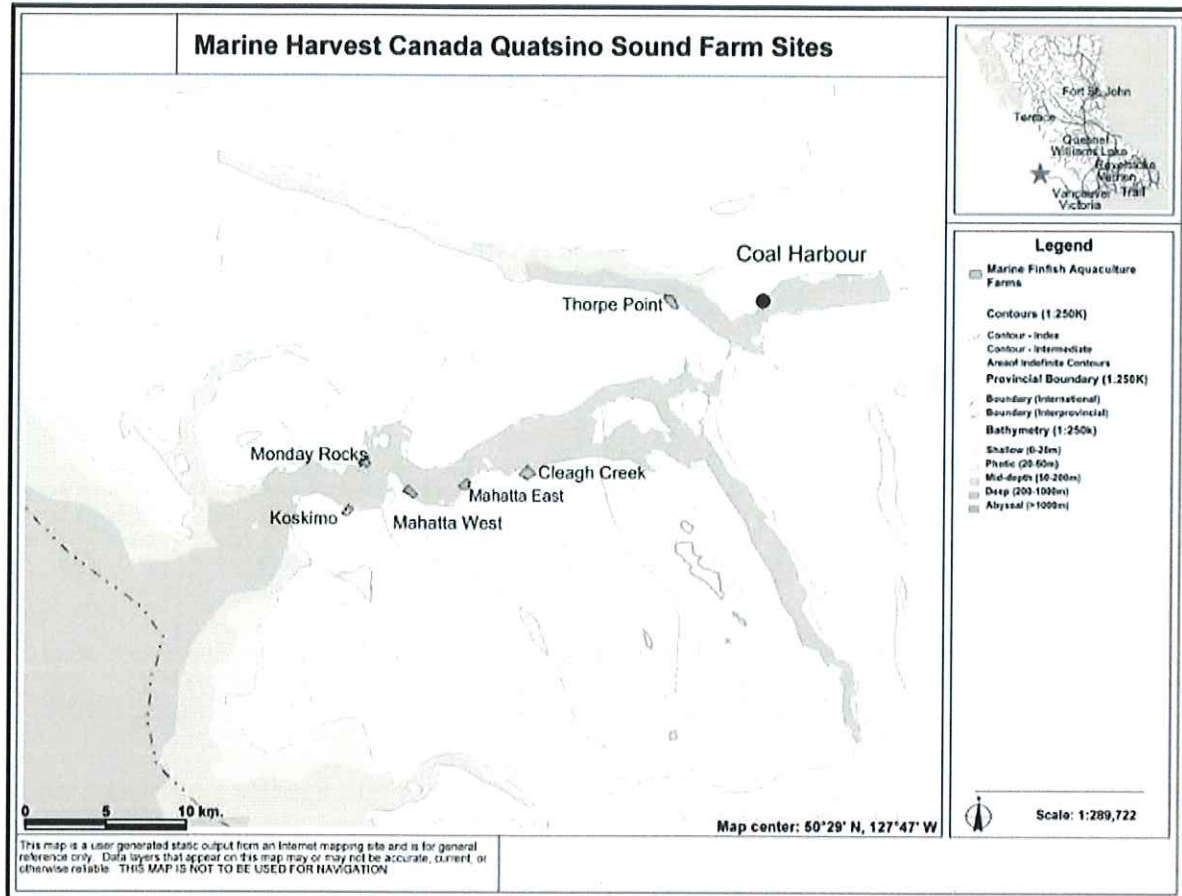
- A summary of any non-chemical treatments for sea lice control conducted, including the type and number of non-chemical treatments conducted in the calendar year.
  - A summary of the number of SLICE (active ingredient emamectin benzoate) treatments conducted at all sites, including the date ranges associated with these treatments and the volume of SLICE used for each treatment.
  - A summary of the ongoing research efforts by the permit holder to investigate the feasibility of additional non-chemical sea lice control methods, including, but not limited to, the use of mechanical removal technology, cleaner fish, and freshwater treatments.
29. Any effects on non-target organisms observed as a result of the release of pesticide-treated waters from the pen or the well boat shall be reported as soon as practicable to the Integrated Pest Management Section Head.
30. Water treatment calculations and dose rates associated with the planned or undertaken pesticide use shall be provided to the Integrated Pest Management Section Head upon request.
31. Pesticide spills that result in impacts not authorized by or consistent with this permit, shall be immediately reported to Emergency Management BC at 1-800-663-3456. Spill-affected areas shall be immediately evaluated and cleaned-up/decontaminated as appropriate. As soon as practicable, the Integrated Pest Management Section Head shall be provided with reports on the nature of the spill, spill impacts as well as any clean-up/ decontamination activities planned or undertaken.
32. If the permit holder believes that the permit holder or another person has contravened the *Integrated Pest Management Act* or Regulation in a manner involving the release of pesticide into the environment, the permit holder must give written notice to the Administrator as soon as practicable.
33. If the permit holder believes that non-compliance with any of the terms and conditions of this permit has occurred, the permit holder must give written notice to the Administrator as soon as practicable. The permit holder shall undertake actions, to the satisfaction of the Administrator, to evaluate the potential impact of the non-compliance on human health and/or the environment.

Date Issued: June 22, 2018

Andreas Wins-Purdy, P.Ag.



Map 1: General Location Map



Date Issued: June 22, 2018

*Andreas Wins-Purdy, P. Ag.*

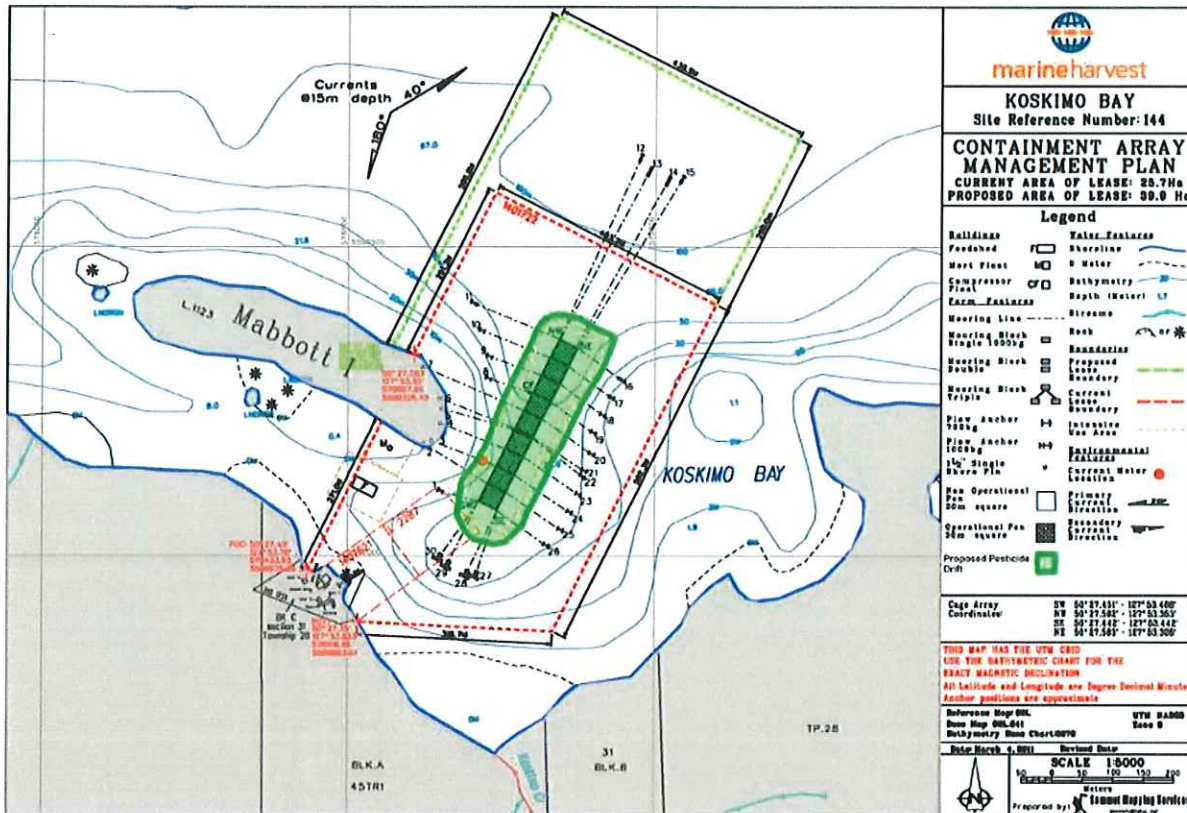
Andreas Wins-Purdy, P. Ag.







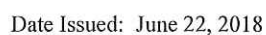
Map 4: Koskimo Bay



Date Issued: June 22, 2018

*Andreas Wins-Purdy, P. Ag.*

Andreas Wins-Purdy, P. Ag.

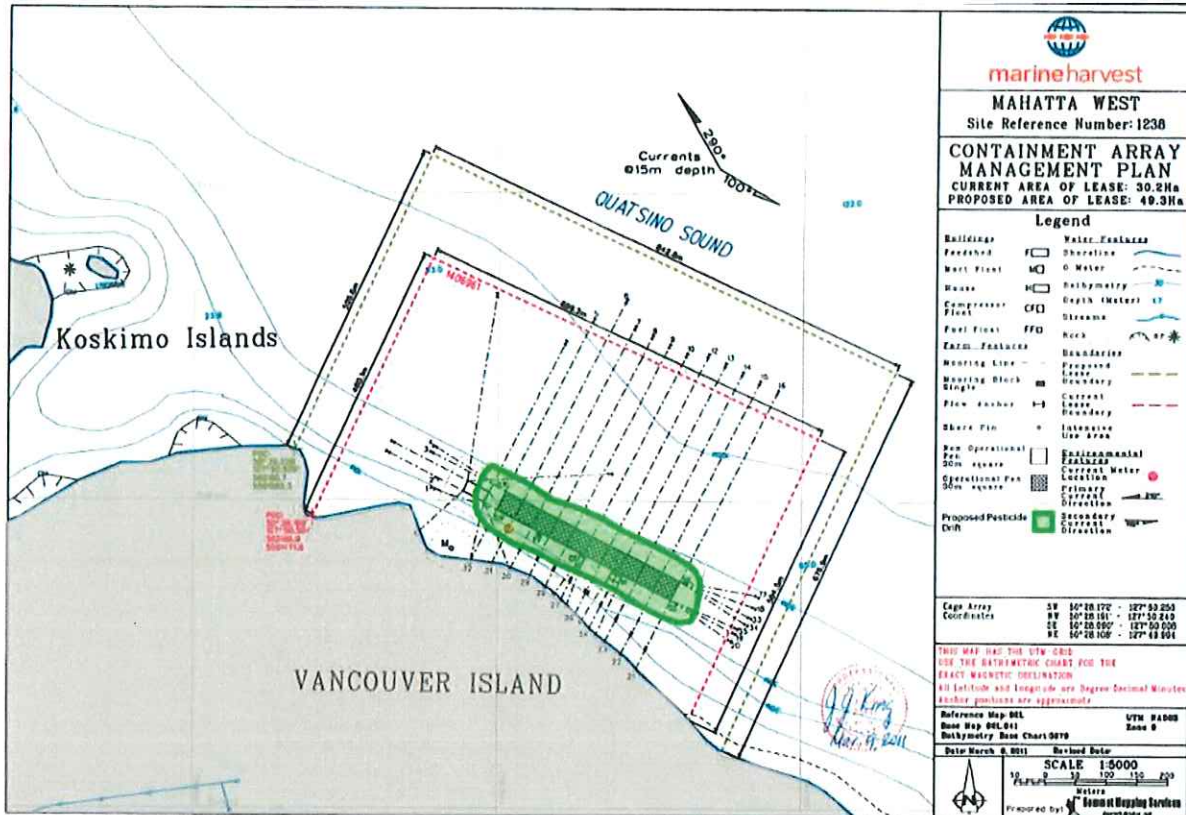


Andreas Wins-Purdy, P.Ag.

On behalf of the Administrator – *Integrated Pest Management Act*

Permit No. 869-0008-18/21

Map 6: Mahatta West



Date Issued: June 22, 2018

*Andreas Wins-Purdy, P. Ag.*

Andreas Wins-Purdy, P. Ag.



