

Pesticide Use Permit Application

under the Integrated Pest Management Act

FORM REFERENCE CODE: EPD-IPM-10v2

INSTRUCTIONS:

Use this form to apply for a pesticide use permit under the *Integrated Pest Management Act* and Regulation. Pesticide use must not proceed unless a permit has been issued.

The permitting process consists of several steps that require the submission of an application form, map and fee, followed by meetings with ministry staff to receive guidance on the consultation process and required documentation. If you have questions, you are encouraged to contact ministry staff by email at IPMPBC@gov.bc.ca.

HOW TO SUBMIT:

Please submit this form and maps via email to <u>IPMPBC@gov.bc.ca</u> with the subject line "Pesticide Use Permit Application". If large files prevent email submission, please use the ministry's File Transfer Service at <u>http://www.env.gov.bc.ca/csd/imb/soft/soft.shtml</u>.

There is an application fee of \$1000 that is due upon submission of this application. The fee is non-refundable after a permit application number has been issued. Please see Section 12 for payment information.

Alternatively, you may mail your application to:

Regional Operations Branch IPM Program Ministry of Environment & Climate Change Strategy PO Box 9377 Stn Prov Govt Victoria, BC V8W 9M6



Pesticide Use Permit Application

Integrated Pest Management Act and Regulation

Section 1: Applicant Information

Applicant Type	X Business	Individual	Governme	nt		1
Company Legal Name as registered with the BC Registrar of Companies OR Individual's Full Legal Name	Grieg Seafood	Grieg Seafood BC Ltd.				
Doing Business As		3				
Incorporation Number as registered with the BC Registrar of Companies (if applicable)	BC1147456	BC1147456				
Legal Address	Unit # / Street 106-1180 Iror	wood Street				5
as registered with BC Registrar of Companies	City			Province	Postal Code	
	Campbell Rive	ər		BC	V9W 5P7	6
Mailing Address	Same as Legal Address				7	
	Unit # / Street					8
	City			Province	Postal Code	9

Section 2: Contact Information for the Applicant

Contact's Last Name	Tomkinson		1
Contact's First Name	Sam		
Contact's Title	Regulatory Specialist		
	Phone	Mobile	
(999) 999-9999	2502860838 2503273918		7
Email Address	sam.tomkinson@griegseafood.com		



Section 3: Authorized Agent ("the Agent")

The Applicant may authorize an Agent to deal with the ministry directly on future aspects of this application. An Agent is a person who is not an employee of the Applicant. *This section must be completed in full if an Agent is used.*

Agent's Type	Business	Individual	Gove	rnment		1
Agent's Company Legal Name as registered with the BC Registrar of Companies (if applicable)						2
Doing Business As if applicable						3
Agent's Last Name						4
Agent's First Name						5
Agent's Title						6
Contact Numbers (999) 999-9999	Phone		M	lobile		7
Email Address						8
Mailing Address	Unit # / Street					9
	City			Province	Postal Code	10

In this section:

"Applicant" means the Applicant as identified in section 1 of this application form, and "Agent" means the Agent as identified in section 3 of this application form.

I/we (the Applicant) hereby authorize the above-named Agent to deal with the ministry directly on all aspects of this application. I/we (the Applicant) understand and agree with the terms and conditions in Section 12 of this application form.

Applicant's Full Name	1
Signature of the Applicant	2
Date signed (YYYY/MM/DD)	3



Section 4: Owner or Manager of the Treatment Location

Name of the owner or manager of the treatment location

Treatment locations are leased from the Province of BC through Licence of Occupation.

Section 5: Description of Proposed Pesticide Use

Please provide a brief overview of the proposed pesticide use.

Pest(s) to be controlled and the importance of the pest control program	Topical removal of sea lice – Lepeophtheirus salmonis Refer to the addendum for more information.	1
Proposed Integrated Pest Management elements (including pest prevention and identification, monitoring program, treatment thresholds, post-treatment evaluation) and the rationale for the proposed pesticide use	If he pest control product, Paramove 50, will only be administered with a receipt of a Pesticide Use Permit and as per the IPMA. Only personnel certified to administer and use H_2O_2 will apply the product. A certified Pesticide Applicator will be present for the entire duration of treatments. Paramove 50 will only be used in accordance with the directions on the product label or in accordance with the Research Authorization (attached) at the concentration dosage directed by the company veterinarian. Paramove 50 application will take place in either a well boat or tarp designed specifically for this purpose. Application time will be a maximum of 30 minutes. Water quality, temperature and dissolved oxygen conditions will be checked prior to start and throughout treatments. Oxygen will be monitored and added as needed. Well boat treatment, completed by the Ronja Islander, will require fish to be crowded, seined, and loaded into one of two 900m ³ capacity wells. The targeted density within the well is calculated based on fish size, well size, and desired density of biomass. The maximum allowable density in kg/m ³ will be determined by Site Management and Fish Health staff. Typical treatments with ideal environmental conditions will target 70-80kg/m ³ with a tolerance to load ± 2-3% of the desired density. Fish will be loaded equally into each well, water parameters within the wells and in the loading pocket will be monitored/recorded continuously. Once the desired concentration of fish is on board, Paramove 50 will be added to the wells in the amount needed to treat fish at the prescribed concentration. Under normal circumstances, treatment time will be 20 minutes with a desired dose of 1200ppm of Paramove 50. These specifications are subject to modifications based on fish welfare, environmental conditions, and fish health recommendations at the time. During the treatments, Fish Health staff on board the well boat will perform titrations to ensure target treatment dosage has been achieved. After maximum dosi	2

Titrations will continue for a period after the dosage time to ensure both wells flush consistently. Hydrogen Peroxide reacts quickly and breaks down into water and oxygen (H_2O and O_2) without creating harmful by-products. Through flushing the wells and introducing new sea water, the H_2O_2 rapidly disintegrates and is neutralized. When all H_2O_2 has been neutralized, below 300ppm, and fish behavior is normal, fish will be pumped back into net pens. To ensure efficacious treatments, the well boat must remain adjacent to the system during treatment and flushing unless otherwise previously specified. The sophisticated sea lice recapture technology on the Ronja Islander is designed to catch and remove all lice stages. All water in the wells is continuously filtered through 150µm krone filters and additional backflush travels to sock filters at 100µm. Any unfiltered lice remain in the well until the wells are emptied for disinfection. Lice in the wells are rendered immobile, non-infectious, or non-viable, depending on the life stage (Johnson, S.C et al. 1993, Jones et al. ACDRP, upcoming). Lice are disposed of according to Grieg's "SOP – Mortality Collection and Storage". Tarpaulin treatment will require fish to be crowded in a shallowed net pen. A tarp will encompass the net pen, hold sea water, and be securely tied in place. Conditions within the tarpaulin will be monitored

pen. A tarp will encompass the net pen, hold sea water, and be securely tied in place. Conditions within the tarpaulin will be monitored closely, oxygen will be added, and dispersion and diffusion equipment utilized as needed. Once fish are settled and water is circulating within the tarp, Paramove 50 will be added, and water monitored to ensure prescribed concentration within the tarp. Staff will check fish behavior and titrate every 8 minutes. After maximum contact time, tarp will be removed, and air circulation will continue to run help and neutralize H2O2. Well boat technology is significantly more advanced and efficient than tarpaulin treatments and will likely always be the primary method of application of Paramove 50.



Section 6: Proposed Start and End Date of Pesticide Use

Please provide the proposed start and end date of pesticide use. The maximum term of a permit is three years.

Start date (YYYY/MM/DD)	2023-06-01	1
End date (YYYY/MM/DD)	2026-07-01	2
Timing of pesticide applications (i.e. time of the year and duration)	Year round, each treatment is about 1-2 weeks in length	3
Anticipated number of applications per year	Generally treatments are 2-3 per farm, however there have been times when 6 treatments are required.	4

Section 7: Geographic Area to be Treated

You will need to submit a digital map with this application form. Your map must identify the gross boundaries of the treatment area, communities, and geographic features applicable to the proposed pesticide use. At a minimum, maps must be provided in PDF format. Additional acceptable formats include .kmz or kml.

In addition to your digital map, please describe the area of the proposed pesticide use below. The description must be consistent with the attached maps and include the names of the communities or landmarks and all regional districts encompassed by the geographic boundaries of the treatment area.

Finfish aquaculture sites (Hecate, Steamer, Lutes and Esperanza) located in Hecate Channel near Zeballos on the West Coast of Vancouver Island.



Section 8: Type of Pesticide Use

Please check the category below that corresponds with your intended pesticide use.

- a) Dermit-restricted pesticide
- b) Aerial application of a pesticide
- c) 🔀 Use of a pesticide in or on a body of water
- d) Use of a pesticide on public land as required under a license or confirmation
- e) Use of a pesticide under a confirmation or licence requiring an exemption from the applicable prescribed standards in Division 7, Part 2 of Integrated Pest Management Regulation

If you checked category(e) above, please indicate:

Existing licence or confirmation number for which an exemption is required	877-0007-19/22	1
Section of the regulated standard requiring an exemption		2
Proposed alternative terms and conditions		3

Section 9: Pesticide Information

Please list all pesticides, including adjuvants, proposed for use under this permit.

Pesticide Trade Name	Active Ingredient	Registration Number under the Federal Pest Control Products Act (P.C.P. No)	Application Rate	Treatment Area (ha)	Quantity (kg)
Interox Paramove 50	Hydrogen Peroxide	31393	1200 mg/l	28.9	1,290,446
	(H2O2)				



Integrated Pest Management Act and Regulation

Section 10: Pesticide Application Methods

Please check all applicable proposed pesticide application methods.

1. Broadcast	2. Selective Treatment	3. 🔀 Immersion Bath
Aerial	Backpack sprayer	4. 🔲 Other
Backpack sprayer	Stem injection	
D Power nozzle	🗆 Wipe-on	
Boom Sprayer		

If you checked the category "Other" above, please specify the methods proposed.





Section 11: Declaration and Signature

By completing this application form for a permit, the Applicant understands and agrees with the following terms and conditions:

1. In this section:

"Administrator" means the administrator appointed under IPMA Section 9;

"Applicant" means the applicant as identified in section 1 of this application form;

"IPMA" means the *Integrated Pest Management Act*, S.B.C. 2003, c. 58, as amended or replaced from time to time;

"FOIPPA" means the Freedom of Information and Protection of Privacy Act, R.S.B.C. 1996, c. 165, as amended or replaced from time to time;

"Province" means Her Majesty the Queen in Right of British Columbia;

"Regulatory Document" means:

a) this application form,

i.

- b) any document that the Applicant submits or causes to be provided submitted to the Province or the Administrator in support of this application, and
- c) any document that the Applicant submitted or causes to be submitted to the Administrator or the Province pursuant to
 - the permit;
 - ii. any regulation made under IPMA that regulates the pesticide use described above; or
 - iii. any order issued under IPMA directed against the Applicant that is related to the pesticide use described above.
- In consideration of the Province receiving this application, subject to paragraph 3, the Applicant hereby irrevocably authorizes the Province to publish on the B.C. government website the entirety of any Regulatory Document.
- 3. Despite paragraph 2, if the Applicant clearly identifies on the face of a Regulatory Document that the Regulatory Document, or clearly identified portions of it, are confidential and provides in writing with the document a rationale for why the document or portion thereof could not be disclosed under FOIPPA, the Applicant does not consent to the Province publishing the document or any portion of it if, in the opinion of the Administrator, the document or portion could not be disclosed under FOIPPA, if it were subject to a request under section 5 of FOIPPA.
- 4. In consideration of the Province receiving this application, the Applicant agrees that it will indemnify and save harmless the Province and the Province's employees and agents from any claim for infringement of copyright or other intellectual property rights that the Province or any of the Province's employees or agents may sustain, incur, suffer or be put to at any time that arise from the publication of a Regulatory Document.
- 5. The Applicant certifies that the information provided in this application form is true, complete and accurate, and acknowledges that the submission of insufficient information may result in this application being returned causing delays in the application review process.

I am:	The Applicant The Agent	1
Full Name (Name of the Applicant, or name of the Agent)	Sam Tomkinson	2
Signature:	Sontanzan	3
Date signed: (YYYY/MM/DD)	2022-11-20	4



Section 12: Payment of Fees

The application fee is \$1000 CAD. No PST or GST is required. The fee is non-refundable after a permit application number has been issued.

		Currently, there is no complete the followin information. DO NOT EMAIL.	electronic payment system for credit card transactions. Please g to arrange for a call-back to collect credit card payment ENTER CREDIT CARD INFORMATION HERE OR SEND BY	1	
	back to pay by credit card	Name of cardholder		2	
		Phone number (999) 999-9999		3	
		Cheques or money o application being retu	rders not received within 10 business days may result in your urned as incomplete.		
	I am submitting my cheque or money order via mail/courier I am submitting this application form electronically, please send a printed copy along with your cheque or money order. Ministry of Environment & Climate Change Strategy Regional Operations Branch IPM Program PO Box 9377 Stn Prov Govt Victoria, BC V8W 9M6				
		Mail:	Ministry of Environment & Climate Change Strategy Regional Operations Branch IPM Program PO Box 9377 Stn Prov Govt Victoria, BC V8W 9M6	4	
		Courier.	Ministry of Environment & Climate Change Strategy Environmental Protection Division Regional Operations Branch IPM Program 3 rd Floor, 525 Superior Street Victoria, BC V8V 0C5		
	I have questions about the application fees	Name		5	
	and would like a call-back for consultation	Phone number (999) 999-9999		6	

Grieg Seafood Hecate Channel Sites



Approximate Treatment Areas









Addendum

Sea lice are parasitic copepods (Copepoda, Caligidae) found in the marine environment. There are two genera, Lepeophtheirus and Caligus, which are commonly found on both wild and farmed salmonids. The dominant species in British Columbia waters is Lepeophtheirus salmonis. In a life cycle, the copepod goes through 2 larval stages (nauplii, copepodite) before entering a chalimus stage denoted by a specialized frontal filament that is used to attach to the host. Upon reaching the pre-adult stage the louse becomes motile before finally morphing into reproductive adults. Lice are readily transferred from wild adult returning salmon in late summer and early fall. Lice levels, survival and fecundity are influenced by a number of factors including adult wild returns (more adult wild returning salmon = more lice), salinity (lower salinity = fewer lice as sea lice do not tolerate lower salinity), temperature (higher temperatures = faster lice growth and reduced life cycles), oceanographic factors impacting distribution, and presence of filter feeders such as mussels that feed on lice and other natural zooplankton. To limit the interaction between out-migrating smolts and the fish on the farm, lice levels are monitored as required in the conditions of the Marine Finfish Aquaculture License issued under the Fisheries Act (at a minimum). If at any time the lice levels rise above an average of 3.0 motile lice (pre-adults and adults) per fish sampled, mitigation measures must be implemented to reduce the levels Lice levels routinely increase late summer and early fall with returning adult pacific salmon.

The Aquaculture Conditions of License outlined by the Federal Government state a threshold of 3.0 average motile Lepeophtheirus salmonis. A signed memorandum of understanding (MOU) sets additional industry standards regarding sea lice. The MOU states if sea lice levels reach 50% of the regulatory threshold outlined in the CoL, monitoring will increase and a potential plan to treat will be put in place. If levels reach an average of 3.0 motile lice per fish, a sea lice mitigation treatment will commence. The typical first line of defense for sea lice mitigation is in-feed treatments (SLICE) using the active ingredient Emamectin Benzoate. Use of SLICE has historically been effective; however, the industry has also outlined in the MOU that an effort to reduce the usage of this product will be made to reduce the likelihood of resistance. Prior to commencing treatments using SLICE or H_2O_2 , bioassays are performed to ensure that the lice are sensitive to mitigation measures. It is understood that all sites will continuously monitor sea lice and control sea lice levels year-round. Additional monitoring measures are also taken during windows of significance to wild salmonid stocks.

Any effective integrated pest management plan, including all farmed animals and crops, requires coordinated treatments, coordinated fallowing, and alternation of treatment classes. Grieg Seafood already coordinates treatments and fallow sites and uses a mechanical treatment vessel. An alternative product such as hydrogen peroxide is a useful tool, to ensure we responsibly manage pests such as sea lice in the Hecate Channel facilities.

Training

Staff that will help lead the application of Paramove 50[™] will be Grieg's Veterinarian, Operations Manager and crew, Fish Health staff and the facility manager. Grieg employees have been successfully conducting Paramove 50 treatments in tarps and well boats since 2017. The following training was provided to ensure the safe and effective application of Paramove 50[™]. Additional training for new staff is conducted as needed.

Two courses are required for staff involved in the treatments

- Hydrogen Peroxide Health and Safety
- Pesticide Applicator (Aquaculture Marine Hydrogen Peroxide Only)

Additional training is required for well boat crew and any operations crew that is involved in the direct handling and loading of the product.

INTEROX® PARAMOVE® 50 Hydrogen Peroxide

Acaricide

SOLUTION

EXPERIMENTAL USE ONLY

For Treatment of Sea Lice on Atlantic Salmon Reared in Marine Aquaculture Sites

ACTIVE INGREDIENT: Hydrogen Peroxide --- 50.0%

RESTRICTED

RESEARCH AUTHORIZATION NO. 0048-RA-21 PEST CONTROL PRODUCTS ACT

SALE PROHIBITED. NOT FOR DISTRIBUTION TO ANY PERSON OTHER THAN A RESEARCHER OR CO-OPERATOR



DANGER POISON

DANGER – CORROSIVE TO EYES DANGER – SKIN IRRITANT

KEEP OUT OF REACH OF CHILDREN

READ THE LABEL BEFORE USING



Manufactured and Distributed by: Solvay Chemicals Inc. 3737 Buffalo Speedway, Suite 800, Houston TX 77098 USA 1-800-SOLVAYC (1-800-765-8292)

Net Contents: XXXX L

NOTICE TO USER:

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label.

NATURE OF RESTRICTION: Only to be applied by individuals who are provincially certified and trained in the application of this product and who hold a pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the application occurs.

USE RESTRICTIONS:

Interox® Paramove® 50 is effective for the removal of sea lice (*Lepeophtheirus* spp. and *Caligus* spp.) in farmed Atlantic salmon. Interox Paramove 50 temporarily paralyses sea lice, causing them to fall off the host. Interox Paramove 50 also reduces egg string viability. Interox Paramove 50 does not remove all growth stages; therefore it should not be used prophylactically. It should be used to treat fish infested with post-chalimus growth stages and before serious skin damage is evident. Some sea lice may recover and reattach to hosts following treatment. Repeat treatments may be necessary.

This product is to be used only in the manner authorized; consult provincial pesticide regulatory authorities about use permits which may be required.

The restricted uses of Interox Paramove 50 may be subject to other legislative requirements such as those under the *Fisheries Act*.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN. KEEP CHILDREN AWAY FROM PRODUCT, CONTAINERS AND APPLICATION EQUIPMENT. Interox Paramove 50 is an oxidising agent and will cause severe burns to skin and eyes. Corrosive to eyes and skin. DO NOT get in eyes or on skin. May be harmful if absorbed through the skin. Fatal or poisonous if swallowed. May be fatal if inhaled. Avoid inhalation of fumes.

When using well boats, all workers/personnel involved in handling, storing, transferring, mixing, loading, applying the concentrate, clean-ups/repair and in activities immediately after application, must wear chemical resistant coveralls (Tyvek or PVC full chemical splash protective suit) over a long-sleeved shirt and long pants, chemical splash proof face shield, socks and chemical-resistant boots and gloves.

When applying to sea cages, all workers/personnel involved in handling, storing, transferring, mixing, loading, applying the concentrate, clean-ups/repair and in activities immediately after application, must wear chemical resistant coveralls (Tyvek or PVC full chemical splash protective suit) over a long-sleeved shirt and long pants, chemical splash proof face shield, socks, and chemical-resistant boots and gloves. Wash thoroughly with soap and water after handling product and before smoking or eating.

All clothing and equipment should be washed with copious amounts of clean water after use. Do not contaminate food, feed or water bodies by the storage or disposal of the product or by the cleaning of equipment. Ensure all connections are tight and free of leaks before using Interox Paramove 50 dispersal systems. Contamination and/or spillage of Interox Paramove 50 can cause violent chemical reactions and/or fire. Before use, all operators should have read and understood this label and the product Material Safety Data Sheet [MSDS]. Copious volumes of water should always be on hand in case of emergencies. Secure containers with non-flammable strapping. DO NOT use absorbent materials to absorb spillage. All containers should be kept closed and out of direct sunlight when not in use. It is recommended that entry to

fish farm areas is restricted until all treatments are completed. It is also recommended that recreational activities in treated water near fish farm areas are not permitted until tidal flushing occurs.

Fire:

Extinguish with water only. If safe to do so, keep containers cool by spraying them with water if exposed to fire. Keep upwind.

FIRST AID

If Swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take the experimental label with you when seeking medical attention.

TOXICOLOGICAL INFORMATION:

Treat symptomatically.

DIRECTIONS FOR USE:

Interox Paramove 50 is administered as an external bath treatment by either using wellboats or completely enclosed tarpaulins. Treat only when thresholds are reached as directed by a veterinarian. Interox Paramove 50 must be added as quickly as possible, while avoiding splashing, to reach the target concentration within the shortest timeframe. Fish to be treated should be starved for at least 24 hours pre-treatment. Do not administer to fish weighing less than 200 g mean bodyweight or fish exhibiting signs of gill damage. Steps should be taken to remove lice floating on the water after treatment to prevent re-infestation. When a wellboat is used for treatment, it is recommended that measures be taken to ensure that dislodged sea lice are not released with discharge water near the farm site (e.g., by using screens on outflow ports to capture dislodged sea lice from discharge water). Allow for a minimum of 7 days between applications. Do not apply more than 6 applications of Interox Paramove 50 per year. The optimum treatment to remove infestations of sea lice is an immersion in a solution of Interox Paramove 50 at a concentration of 1500 ppm of hydrogen peroxide for a period of 20 minutes at temperatures up to $13^{\circ}C$ ($55^{\circ}F$). Interox Paramove 50 treatments may be extended for up to 30 minutes if desired. Shorten treatment time if water temperature is higher than $13^{\circ}C$ ($55^{\circ}F$). Additional guidance is provided in the table below:

NOTES:

■ Temperatures greater than 13°C and/or exposures longer than 20 minutes may result in damage or mortality of treated fish. Use extreme caution when applying at higher temperatures. Discontinue treatment and flush with sea water immediately if signs of distress in fish are observed;

Efficacy of treatment may be reduced when using concentrations below 1500 ppm.

The fish to be treated must either be crowded into a small area of the production net and completely encircled with a tarpaulin or transferred into a wellboat confinement area. Fish must not be crowded to the point where scale loss occurs. Water temperature and dissolved oxygen levels will dictate the stock density in the treatment area. Supplemental oxygen must be supplied during crowding and treatment. The volume of water entrapped must be calculated (surface area of treatment area times the depth of the enclosed pen/well minus the fish biomass = cubic metre) then the estimated quantity of INTEROX PARAMOVE 50 required to achieve the target concentration indicated above should be added using a dedicated dosing system, such as a pump with venture and hoses/pumps for the enclosed tarpaulin method and a batch controller for the wellboat method. Representative water samples from the treatment area must be taken at regular times during the treatment period and tested to determine the concentration of hydrogen peroxide. The first sample should be taken at regular intervals thereafter (e.g., 15, 20, 30 minutes) to ensure that the concentration of hydrogen peroxide is maintained for the entire duration of the treatment. The requirement to add more Interox Paramove 50 or shorten the treatment period is based on these analytical results. Concentrations can be reduced by pumping fresh sea water into the treatment enclosure.

The second se	00	0.100	10.140	. 140
Temperature	<8C	8-10C	10-14C	>14C
Current concentration required (mg/l)	1700-1800	1550-1700	1400-1550	1200-1400
Control study (mg/l)	1750	1625	1475	1300
Reduction study #1 (mg/l)	1500	1200	1200	900
Reduction study #2 (mg/l)	1200	900	900	
Reduction study #3 (mg/l)	900			
Total number of fish required	100,000	75,000	75,000	50,000

BEST USE RECOMMENDATIONS

Please note that INTEROX PARAMOVE 50 contains hydrogen peroxide. Product performance should be closely monitored following treatment. In addition, any sea lice population may contain individuals naturally less susceptible to INTEROX PARAMOVE 50 and hydrogen peroxide. These individuals may dominate the sea lice population if hydrogen peroxide is used repeatedly in the same site. Other mechanisms leading to decreased susceptibility, such as enhanced metabolism, may also exist. Appropriate management strategies should be followed:

- Where possible, rotate the use of Interox Paramove 50 or other hydrogen peroxide products with different groups that control the same pests in a site.
- Use of this product should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
- Monitor treated pest populations for product performance.
- Contact an aquaculture specialist for any additional IPM recommendations for the specific site and pest problems in your area.
- For further information or to report problems with product performance, contact Solvay Chemical Inc. at 800-916-3232

PRECAUTIONS FOR SALMON:

Hydrogen peroxide has a short term adverse effect on fish gills. This is aggravated when gills have been damaged or compromised pre-treatment. Treatments must not be carried out if; 1) there has been or is an algal or plankton bloom, or 2) there is high organic and/or metal loading in the water of the treatment pens. Treatments must not be considered if the Secchi disc reading is less than 4 metres. If there is any doubt, it is advisable to have histology studies carried out on samples of gill before treatment. Net changes, grading and other management procedures that stress fish must be avoided the week before treatment. Crowding of fish as per the treatment instructions may stress fish. Dissolved oxygen meters must be used to monitor oxygen levels at all times. Supplemental oxygen must be supplied to the pen during the crowding period, setting of the enclosed tarpaulin or introduction into the wells and during treatment. The oxygen supply may be ambient level. Greater care is required in monitoring dissolved oxygen levels and stress as water temperatures increase. Irrespective of concentration of Interox Paramove 50 achieved, extended exposure times are toxic to fish. Treatment times must not be extended beyond 30 minutes from the achievement of the target concentration of Interox Paramove 50 in the treatment pen/well. Discontinue treatment and flush with sea water immediately if signs of distress in fish are observed. Monitor treatments for signs of distress by fish. If necessary (e.g., concentration of hydrogen peroxide exceeds 1800 ppm), take immediate steps to flush treatment area with fresh sea water using appropriate physical agitation. A sample of water from the treatment area should be taken and analyzed for hydrogen peroxide concentration between 2 and 5 minutes after treatment is completed to ensure rapid removal of any residual hydrogen peroxide from the wells or enclosed tarpaulins. Target concentration of hydrogen peroxide in the treatment area at the end of the treatment is 0 ppm. NOTE: Use only systems/procedures that are capable of determining hydrogen peroxide concentrations in sea water.

ENVIRONMENTAL PRECAUTIONS:

TOXIC to aquatic organisms. Apply only to net pens enclosed by a tarpaulin or in a wellboat. Product is designed for the treatment of fish; however, at levels greater than the treatment dose, the product could be harmful to fish and aquatic life.

STORAGE:

Store product in original container in a cool place away from food, feed or other pesticides. Protect from prolonged exposure to direct sunlight. Store away from incompatible or flammable materials. Do not store bulk product for extended periods. In case of leakage or spill, flush area with large amounts of clean water and flush to drain in accordance with federal /provincial requirements. DO NOT flush into systems containing oil, fuel or other flammable materials. DO NOT use absorbent materials to absorb spillage. A clean water supply should be readily available for dealing with spills and for supplying showers and/or eyebaths.

DISPOSAL:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the treatment site or tank.

2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.

- 3. Make the empty container unsuitable for further use.
- 4. Dispose of the container in accordance with provincial requirements.

5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.



Santé Canada

Pest Regulatory Agency

Health

Canada

Agence de Management réglementation de la lutte antiparasitaire

Sub. No. 2021-4975

November 17, 2021

Tom Candy Solvay Chemicals Ltd 3737 Buffalo Speedway, Suite 800 Houston, Texas 77098

Dear Tom Candy:

Re: Submission Number 2021-4975 Research Authorization for Interox Paramove 50, containing hydrogen peroxide for the control of sea lice on salmon

The Pest Management Regulatory Agency (PMRA) has now completed the review of your application for a research authorization which was received on September 13, 2021. Your application is acceptable and research authorization number 0048-RA-21 has been assigned to research authorization submission number 2021-4975.

The research authorization is granted until 31 December 2023 under the conditions indicated in this letter, on the certificate and on the label. Any changes to the research trials may require a new application for a research authorization.

The following conditions and comments apply to this research authorization:

Disposition of Treated Crops:

The sale of treated Atlantic salmon for feed or food from this research authorization can be supported.

Required Label Revisions:

Refer to accompanying PMRA annotated experimental label for required label revisions.

Other Requirements:

A list of co-operators and trial locations must be submitted to the PMRA prior to the start date of the research trial using the following instructions:

Note: As per Regulatory Directive 'DIR 2006-05: Requirements for Submitting Data Index, Documents and Forms', the Agency requires that all application documents be submitted as an electronic "e-Index" created with the PMRA's "e-Index Builder" software program in the form of a prz file. The PRZ file can then be submitted either by



the Secure Web Portal (if you have an account), via email to <u>hc.pmra.docs.arla.sc@hc-sc.gc.ca</u>, or on a CD/DVD/USB sent by mail. <u>Important:</u> Information must not be bundled for multiple submissions into a one single PRZ. A separate prz must be created for each individual submission number. For further information, please visit the PMRA website at <u>https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/registrants-applicants/electronic-pesticide-regulatory-system.html.</u>

• All research activities must be supervised by qualified research personnel and all label directions, precautions and instructions must be followed.

Further Comments:

• It is not clear from the submitted protocol if efficacy tests will be conducted in net pens or aboard a wellboat. The Interox Paramove 50 label includes directions for application both aboard wellboats and in net pens which are completely enclosed by tarpaulins. The efficacy trials should take into account both methods of application if it is desired to support lower application rates in net pens and aboard wellboats.

A copy of your experimental label is enclosed along with the research authorization. Posters listing warnings, authorization number and a contact person must be posted at each research site. Information on the posting of research signs and compliance can be located at the following website address: http://www.hc-sc.gc.ca/cps-spc/pubs/pest/_fact-fiche/index-eng.php#res-rech

Should you have any questions or comments regarding this review please do not hesitate to contact the Administrative Coordinator for this submission, Meghan Watson, at email Meghan.watson@hc-sc.gc.ca.

Yours sincerely,

Margherita Conti Director General Value Assessment and Re-Evaluation Management Directorate PEST MANAGEMENT REGULATORY AGENCY

Attachments: Research Authorization Certificate PMRA Annotated Label Signage Documents

Page 3 of 3 <u>T. Candy :</u>

cc Joe McCarthy, Dell Tech Ltd.
 Kathy Stapleton, Section Head of Compliance Program and Operations, Health Canada
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