

Case No: 2024-0097 Date of visit: 27/03/2024

Time spent on site: 6h Main Inspector: [REDACTED]

Site No: FS1042 Site Name: Seaforth
Business No: FB0119 Business Name: Mowi Scotland Ltd

Case Types: 1 ECI 2 CNI 3 SLI 4 VMD 5 REP 6 DIA

Water Temp (°C): 8 Thermometer No: T173 FHI 045 completed N/A

Observations: Region: WI Water type: S CoGP MA: W-6

Dead/weak/abnormally behaving fish present? Y If yes, see additional information/clinical score sheet.
Clinical signs of disease observed? Y If yes, see additional information/clinical score sheet.
Gross pathology observed? Y If yes, see additional information/clinical score sheet.
Diagnostic samples taken? Y

UNI/REG only - if unable to carry out intended visit detail reason below:
[REDACTED]

Additional Case Information:

Peaks in salmon mortalities: 2023 wk 48 33387 (2.88%), wk 49 59170 (5.19%), wk 50 79026 (7.31%), wk 51 21285 (2.13%), wk 52 20242 (2.07%). Pasteurella the main cause of mortalities with some thermolicer mortalities in wk 49 also, antibiotic (Florfenicol) administered

2024: wk 3 17504 (1.97%) recorded as acute loss medicine (salmosan) and some pasteurella.

Mortalities for the last four weeks, 18th to the 26th March 2024 5415, wk 11 8962 (0.90%), wk 10 13613 (1.54%), wk 9 20576 (2.40%), wk 8 19456 (2.22%) moritella, physical damage, poor performers some seal predation and some decomposed.

Lumpfish peaks in mortality, 2023: wk 47 3161 (2.12%), wk 48 6104 (4.18%), wk 51 5112 (3.70%), wk 52 3575 (2.68%), mainly recorded as tenbaculum but some handling morts as well.

Lumpfish mortalities for the last four weeks: wk 8 1391 (2.70%), wk 9 1928 (3.85%), wk 10 1071 (2.22%), recorded as tenebaculum, wk 11 4867 (10.33%) treatment losses (FLS flusher),

CMS potentially onsite, awaiting results of tests.

On inspection of the site a number of moribunds were observed in each pen, some with obvious physical damage. Site staff have been removing moribunds daily.

Mortality, movement and treatment records inspected 21/3/2024 remotely, all other records inspected on the 27/3/2024.

Case No: Site No:

Date of Visit: Inspector(s):

Registration/Authorisation Details

1. Business/site details summary checked by site representative?

2. Changes made to details?

Site Details (include cleaner fish for all sections)

Total No facilities	<input type="text" value="10"/>	Facilities stocked	<input type="text" value="10"/>	No facilities inspected	<input type="text" value="10"/>
Species	<input type="text" value="SAL"/>	<input type="text" value="LU"/>			
Age group	<input type="text" value="2023 Q2"/>	<input type="text" value="2023 Q1"/>			
No Fish	<input type="text" value="127,259"/>	<input type="text" value="672,031"/>			
Mean Fish Wt	<input type="text" value="3.68kg"/>	<input type="text" value="3.12kg"/>			
Next Fallow Date (Site)	<input type="text" value="October 2024"/>		Next Input Date (Site)	<input type="text" value="Feb 2025"/>	
Recent (last 4 wks) disease problems?			Any escapes (since last visit)?	<input type="text" value="N"/>	
If yes, detail:	<input type="text" value="Moritella and Tenacibaculum"/>				

Movement Records

1. Movement records available for inspection?

2. Date of last inspection:

3. Are records complete and correctly entered?

4. Are movement records available for dead fish and waste?

5. Are records complete and correctly entered?

6. Are health certificates for introductions (outwith GB) available?

Transport Records

1. Are any movements carried out by (or on behalf) of the business (not using a STB)?

If yes, is there a system in place for maintenance of transportation records?

Mortality Records

1. Mortality records available for inspection?

2. How are mortalities disposed of?

If other detail:

3. Mortality records complete and correctly entered?

4. Recent mortality (last 4 wks):

5. Evidence of recent increased/atypical mortalities?

If yes, facility nos/no mortality per facility/no stock per facility/reason:

6. Any other peaks in mortality during period checked?

If yes, detail:

7. Have increased (unexplained) mortalities been reported to vet or FHI?

If yes, detail action:

8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.

Treatments and Medicines Records

1. Recent treatments (see comment)?	<input type="checkbox"/>	Y
If yes, detail:	FLS flusher, salmosan, TMS	
If other, detail:		
2. Medicines records available for inspection?	<input type="checkbox"/>	Y
3. Are records complete and correctly entered?	<input type="checkbox"/>	Y
4. Are fish in a withdrawal period?	<input type="checkbox"/>	Y
5. If yes, what treatment(s)?	Salmosan, TMS	
If other, detail:		
6. Are medicines stored appropriately?	<input type="checkbox"/>	Y

Biosecurity Records

1. Biosecurity records available for inspection?	<input type="checkbox"/>	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	<input type="checkbox"/>	Y
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any <i>increased (unexplained)</i> mortality at the site been included?	<input type="checkbox"/>	Y
4. Has the action that will be taken in the event that the presence or suspicion of the presence of a listed disease is detected been included and <i>how</i> and <i>when</i> that will be notified to Scottish Ministers?	<input type="checkbox"/>	Y
5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?	<input type="checkbox"/>	Y
6. Have the husbandry and biosecurity measures implemented between each epidemiological unit to minimise transmission of disease been covered (movement of staff, visitors, equipment, live or dead fish etc.)?	<input type="checkbox"/>	Y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	<input type="checkbox"/>	Y
8. Have the biosecurity procedures been adequately implemented on site?	<input type="checkbox"/>	Y
If no, detail:		

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	<input type="checkbox"/>	Y
2. If yes, are results available for inspection?	<input type="checkbox"/>	Y
3. Any significant results?	<input type="checkbox"/>	Y
If yes, detail (if not detailed under recent disease problems).	moritella, pasteurella skyensis, tenacibaculum	

Records checked between:	21/11/2023 to 27/3/2024
--------------------------	-------------------------

Case no: Site No: Date of visit/
Sampling:

Priority samples: VI BA PA MG HI

Time sampling starts/ends: Inspector: VMD No.

Environmental conditions: 1 2 3 4 5

Summary samples HIST BA MG VI PA Total Samples

Add Fish/Pools - click

Pool/Fish No	F1	F2	F3	F4	F5								
Fish nos	1	2	3	4	5	6	7						
Pool Group	P1	P1	P1	P1	P1								
Species	SAL	SAL	SAL	SAL	SAL	SAL	SAL						
Average weight	2.9kg	2.9kg	2.9kg	2.9kg	2.9kg	2.9kg	2.9kg						
Sex	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Water Type	SW	SW	SW	SW	SW	SW	SW						
Stock Details		loch lochy	loch lochy	Loch Arkaig	Loch Arkaig	Loch Arkaig	Loch Arkaig	Loch Lochy					
	Stock Origin												
Facility No	5	5	3	3	3	7	5						

Case no: **2024-0097** Site No: **FS1042** Method of killing: **Percussive**
 Date of visit: **27/03/2024** Inspector(s): **[REDACTED]** Sheet Relevant: **Y**

S for strong presence: M for medium presence: W for weak presence

Fish Number		1	2	3	4	5				
Time sampled after death (if > 45 minutes)										
External Signs										
Behaviour	Moribund	S	S	S	S	S				
	Lethargic									
	Hanging vertical									
	Spiralling									
	Flashing									
	Loss of equilibrium									
Body	Dark									
	Distended abdomen									
	Anorexic									
	Scale Oedema									
Opercula	Shortened		M							
	Flared									
Haemorrhaging	Throat									
	Ventrum									
	Base of fins									
	Elsewhere	W	W	W		W				
Eyes	Exophthalmic			S						
	Enophthalmic (sunken)									
	Cataract									
	Haemorrhagic									
Gills	Pale									
	Zoned									
	Necrotic									
Lesions	Flank		S			S				
	Elsewhere									
Vent	Inflamed									
	Trailing faeces									
Lice Load	Estimate numbers	0	0	0	0	0				
Internal Signs										
Ascites	Clear									
	Bloody									
Oedema	In tissues									
Heart	Pale/anaemic									
	Granulomas									
	Deformed									
Liver	Petechial haem		m	s						
	Gross haem									
	Tissue breakdown									
	Enlarged									
	Colour number(s)	4	4	6	6	5				
	Granulomas									
	Lesions									
Pyloric caeca	Petechial haem									
	Tubules mauve									
	Lack of fat									
Spleen	Enlarged		m	m	m					
	Granulomas									
Gut	No food present									
	Yellow pseudo-faeces									
	External haem									
	Internal haem									
Body wall	Haemorrhaging									
Swim bladder	Haemorrhaging									
	Fluid filled									
Kidney	Swollen									
	Grey									
	Granular	W	W	W	W	W				
	Liquefied									
General	Parasites present									
	Anaemia									

Additional comments:

Case Number:	2024-0097	Site No:	FS1042	Insp:		
Date of Visit	27/03/2024	No of movements/supp./dest.			Score	
Live fish movements		0	1-5	6-10	>10	
Movements on (from out with GB) of susceptible species	Frequency of movements on from equivalent MS	0	5	10	14	0
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	0
	Number of suppliers	0	5	10	14	
Movements off	Frequency of movements off	0	3	6	10	10
	Number of destinations	0	3	6	10	3
Exposure via water	Site contacts	0	1-5	6-10		
Water contacts with other farms (holding species susceptible to same diseases)	Farm is protected (secure water supply through disinfection or borehole)	0				
	Farm is on-line or in a coastal zone with category I farms upstream or within 1 tidal excursion	1	2	4		2
	Farm is on-line or in a coastal zone with category III farms upstream or within 1 tidal excursion	1	3	6		
	Farm is on-line or in a coastal zone with category V farms upstream or within 1 tidal excursion	1	4	8		
Management practices		None	Secure	Unsecure		
Water contacts with processors	Any processing plant discharging into adjacent waters	0	1	2		0
On farm processing within the rules of the directive	No on farm processing	0				0
	Processing own fish (re-cycling risk)	1				
	Processing fish from MS of equivalent status	2				
	Processing fish from zone or compartment of equivalent status	4				
	Processing fish from Category III farm	8				
	Processing fish from Category V farm	10				
Disposal of fish and fish by-products	Site's own waste only processed.	0				0
	Common processes with other farms	3				
	Collection point for waste from other farms	5				
Use of unpasteurised feeds	No feeding of unpasteurised feed	0				0
	Feeding unpasteurised feed	5				
Biosecurity	Number of sites	1	2 or 3	≥ 4		
Contacts with other sites	Sites operating from single shorebase	0	1	2		1
	Sites sharing staff and equipment	0	1	2		
Disinfection of equipment between sites, use of footbaths etc	Yes	0				0
	No	1				
CoGP/Regulator						
Practices in accordance with regulator or industry code of practice	Yes	0				0
	No	3				
Platform access to cages	Yes	0				0
	No	2				
Total Rank					16	MEDIUM

Case No: **2024-0097**

Site No: **FS1042**

Sea Lice Inspection (Seawater Sites Only)

- 1. Has the site experienced sea lice problems in the previous 4 years?
- 2. Is the CoGP Farm Management Area (or equivalent) followed synchronously on a single year class basis?
- 3. Does the site have access to a range of licenced in-feed and bath sea lice medications (including deltamethrin, azamethiphos and emamectin benzoate) as well as access to suitable biological and/or mechanical control measures, and can these be deployed in a reasonable period of time?
- 4. Is there a signed documented farm management agreement or statement relevant to the site and CoGP Farm Management Area (or equivalent)?
- 5. Are sea lice count records available for inspection? (Legal SSI, CoGP Annex 6)
- 6. Do records adequately reflect the required standard specified in the SSI and the CoGP? (Legal SSI, CoGP Annex 6)
- 7. Are sea lice (*L. salmonis*) record levels below the suggested criteria for treatment in the CoGP during the period that records are inspected? (CoGP Annex 6)
- 8. Have average adult female sea lice (*L. salmonis*) numbers per fish been at a level of 3 or above (prior to w/b 10/6/19) or 2 or above (from w/b 10/6/19) during the period that records are inspected?
- If yes, have these been reported to the Fish Health Inspectorate? If no, FHI see comment.
- 9. Is *C. elongatus* infestation at a level which is considered to cause significant welfare problems? (CoGP 4.3.81, 5.3.50)
- 10. Have therapeutic treatments been administered or other actions taken when *L. salmonis* levels have exceeded the suggested criteria for treatment or where *C. elongatus* is considered to have welfare implications? (CoGP 4.3.82, 5.3.51)
- 11. Has any other action been taken (where applicable)?
- 12. Have therapeutic treatments or the actions taken had a significant impact upon the lice levels recorded?
- 13. Are treatments, where conducted, carried out in cooperation between participating farms?
- 14. Is there a harvesting strategy for the site, where fewer populations or part populations are held without treatment for sea lice?
- 15. Is there a site specific written lice management procedure with waypoints describing set actions to deal with recognised scenarios during the escalation of a sea lice infestation?
- 16. Do the sea lice levels observed on stocks reflect sea lice count data? If no please detail reasons.

Containment Inspection

- 1. Has the site experienced equipment damage due to predators in the current or previous production cycles?
- 2. Are measures in place to mitigate against the predation experienced on site? (Detail below)
- seal pro nets, top nets, highly tensioned nets,
- If other, detail below:
- 3. Have escape incidents or events been experienced on or in the vicinity of the site since the last FHI inspection?
- If Yes proceed with questions 4 – 9. If No skip to question 10
- 4. Have these been reported to Scottish Ministers?
- 5. Have these been reported to local DSFB forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
- 6. Have these been reported to the SSPO and local fisheries trusts forthwith (where they exist)? (CoGP – 4.4.37, 5.4.17)
- 7. Were methods (if any) used to recover escapees? If yes give detail
- 8. If gill nets were deployed was this action agreed with local wild fish interests and was permission given by Scottish Ministers? (Legal, CoGP – 4.4.38, 5.4.18)
- 9. What action was taken to prevent and minimise the risk of further escapes? (Not covered in code but could be considered under satisfactory measures of the Act)
- 10. Is the site inspected as satisfactory with regards to containment? If no, please detail reason(s)

Case No: 2024-0097

Site No: FS1042

Date of Visit: 27/03/2024

Inspector: [REDACTED]

Point of Compliance

1. Is the farm under inspection located within a farm management area?

If N, no further questions require completion.

Points of Compliance for Both Farm Management Agreements and Statements

2. Has a current farm management agreement or statement (FMAg/S) been prepared?

3. Is the current FMAg/S available for inspection?

4. Does the FMAg/S identify the relevant farm management area?

5. Does the FMAg/S identify the fish farm site(s) to which it applies?

6. Does the FMAg/S identify the date of commencement of the agreement or statement?

7. Does the FMAg/S identify the date of review?

Arrangements for Fish Health Management

8. Does the FMAg/S identify the minimum health standards for the stocks to be introduced to the area or farm?

9. Does the FMAg/S identify the vaccination requirements for stocks held in the area or farm?

10. Does the FMAg/S identify the species of fish which may be stocked into the area or farm?

11. Does the FMAg/S identify the maximum stocking density of any pen on any farm in the area or the individual farm?

12. Does the FMAg/S identify the arrangements for the storage and disposal of any dead fish from any fish farm in the area or the individual farm?

Arrangements for The Management of Sea Lice

13. Does the FMAg/S identify arrangements for the sharing of data on sea lice numbers and treatments?

14. Does the FMAg/S identify the availability and the use of medicines on farms covered by the agreement of statement?

15. Does the FMAg/S identify any requirements for the sensitivity testing of available treatments for sea lice on farms in the area or individual farms?

16. Does the FMAg/S identify the circumstances under which biological controls and cleaner fish are to be used on farms in the area or individual farms?

17. Does the FMAg/S identify the arrangements for synchronous treatments on farms within the area?

Live Fish Movements

18. Does the FMAg/S identify the circumstances when live fish may be introduced or removed from the area or farm?

19. Does the FMAg/S identify the arrangements for the movement of live fish on and off sites in the area or individual farms?

Harvesting

20. Does the FMAg/S identify acceptable harvest practices on farms in the area or individual farms?

Fallowing

21. Does the FMAg/S identify the dates by which the area or individual farm will be fallow and the earliest date when a farm or area may be restocked?

22. Does the FMAg/S identify whether one or more year classes may be stocked onto sites covered by the agreement or statement?

23. Does the FMAg/S identify whether broodstock or potential broodstock are to be kept on any site covered by the agreement or statement?

Point of Compliance for Farm Management Agreements Only

24. Does the farm management agreement include arrangements for persons to become, or cease to be, parties to the agreement?

Management and operation

25. Is the fish farm being managed and operated in accordance with the agreement or statement?

26. What is the version no/date of issue of the FMAg/S?



F1 and F2	5	Atlantic salmon	3.6 kg 2023 Q2	Loch Lochy
F3, F4 and F5	3	Atlantic salmon	3.6 kg 2023 Q2	Loch Arkaig

Results

Bacteriology: Kidney and gill material from F1-5 and lesion material from F2 and F5 were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated:

- *Moritella viscosa* (lesion F5)
- *Vibrio* sp. (isolate B) (lesion F2)
- *Vibrio* sp. (isolate D) (lesion F2 and F5)
- *Shewanella* sp. (kidney F2)

The level and purity of growth of the second *Vibrio* sp. (Isolate D) would not suggest this bacterium may be implicated as the primary source of this lesion or of overall morbidity.

The level and purity of growth of *Shewanella* sp. would not suggest it would be implicated as the primary source of morbidity.

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (qPCR).

Infectious pancreatic necrosis virus (IPNV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	15.92	17.84	17.87	17.86	POSITIVE
F2	14.20	18.39	18.67	18.64	POSITIVE
F3	14.98	32.26	32.03	32.17	POSITIVE
F4	15.09	13.86	13.90	13.91	POSITIVE
F5	15.07	24.74	24.88	24.85	POSITIVE

Sequencing analysis of samples from F1, F2 and F4 showed consistency with IPNV A2, virulence motif PTA indicating a persistent virulence typically high morbidity ($\leq 90\%$) and in general little to no mortality (less than 10%)

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1		-	-	-	Negative
F2	21.87	32.30	32.34	32.27	POSITIVE
F3		-	-	-	Negative
F4		-	-	-	Negative
F5		-	-	-	Negative

R09

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), viral haemorrhagic septicaemia virus (VHSV) and piscine myocarditis virus (PMCV).

Parasitology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the parasites specified below using real-time PCR (qPCR).

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	23.47	>40	>40	>40	POSITIVE
F2	21.87	35.80	35.60	35.95	POSITIVE
F3	21.23	34.97	35.18	35.28	POSITIVE
F4	21.37	34.21	34.09	34.09	POSITIVE
F5	22.24	36.98	36.88	36.74	POSITIVE

The samples tested negative for *Neoparamoeba perurans* (AGD).

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney, were taken from F1-F5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Lamellar hyperplasia and fusion, mild, multifocal (F1). Several basophilic epithelial inclusions (likely epitheliocystis) observed in F1. Some aneurysmal dilation/telangiectasia (F1-F5). Some fish displayed post-mortem artefacts (F2, F4-F5).

Skin & Muscle: Lesion: Absence of epidermis. Dermal oedema, mild, with presence Gram-negative rod-shape bacteria, myositis with mild haemorrhage and inflammatory influx (F2). F5 displayed leucocyte infiltration, dermal oedema, and Gram-negative rod-shape bacteria.

Heart: Ranging from very mild to mild myocarditis (F1) and focally extended in F2. Mild epicarditis (F1, F2, F5). F3 displayed two thrombi.

Gut and pyloric caeca: Peritonitis, mild (F5). Some cellular sloughing (F1).

Pancreas: Pancreatic acinar necrosis, very mild to mild, multifocal (F1).

Liver: Several apoptotic individual cells (F1). Hepatocellular vacuolation (macrovesicles), some, diffuse (F4). Mild cuffing (F3).

Kidney: Interstitial necrosis, mild, multifocal (F1, F2) with inflammatory circulating cells. (F1).

Spleen: Some cuffing (F1, F3) and some erythrophagocytosis (F3). Occasional shaped Gram-negative bacilli observed in F2.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

R09

Signed:



Fish Health Inspector

Date: 24/04/2024

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at [Fish Health Inspectorate Service Charter - gov.scot \(www.gov.scot\)](https://www.gov.scot/policies/fish-health-inspectorate/)

R09

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0119	DATE OF VISIT	27/03/2024
SITE No	FS1042	SITE NAME	Seaforth
CASE No	20240097	INSPECTOR	██████████

Inspection under the Aquatic Animal Health (Scotland) Regulations 2009

The above site was inspected following reports of elevated mortalities.

All epidemiological units were inspected. Samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

Records

The surveillance frequency category of the site was assessed as medium. An inspection under the Aquatic Animal Health (Scotland) Regulations 2009 will be conducted every second year. The category of the site will be reassessed on a routine basis and updated as required.

The information required for the public record of aquaculture production businesses regarding this site was verified and where necessary updated. The following records were also inspected to ensure that the conditions of authorisation for your Aquaculture Production Business (APB) are being met:

Aquaculture animal and aquaculture animal product movement records were inspected and appeared to be adequately maintained.

Mortality records were inspected and found to be adequately maintained.

Mortality levels had exceeded the reporting criteria since the last inspection and had been reported to the Fish Health Inspectorate as required.

Reports detailing the results of animal health surveillance carried out by or on behalf of the business and/or Marine Directorate were available for inspection.

The biosecurity measures plan for the site was inspected and found to be adequately maintained and implemented.

Inspection under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015

Medicine records were inspected and found to be adequately maintained.

Samples were taken to be analysed for veterinary residues.

R25

Inspection under the Aquaculture and Fisheries (Scotland) Act 2007

The site was also inspected in accordance with the Aquaculture and Fisheries (Scotland) Act 2007, as amended, with respect to section 3 regarding parasites (sea lice), section 4A regarding fish farm management agreements and statements and section 5 regarding containment and escapes.

On this occasion the site was found to be satisfactory with regards to parasites, fish farm management agreements and statements and containment and escapes.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:



Fish Health Inspector

Date: 03/04/2024

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Scottish Government website at [Fish Health Inspectorate Service Charter - gov.scot \(www.gov.scot\)](https://www.gov.scot/policies/fish-health-inspectorate/)