Case No: 2021-0258 Date of visit: 16/09/2021

Time spent on site: 8 hours Main Inspector: [redacted]

Site No: FS1342 Site Name: West Strome
Business No: FB0169 Business Name: The Scottish Salmon Company

Case Types: 1 DIA 2 WEL 3 4 5 6

Water Temp (°C): 13.7 Thermometer No: T148 FHI 045 completed

Observations: Region: HI Water type: S CoGP MA M-20

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:

Additional Case Information:

Records checked remotely by [redacted] accompanied by [redacted]. Inspection and sampling by [redacted], accompanied by [redacted] and APHA. 9 pens left stocked on date of site visit (16/09/21). 2 pens harvested on 7th, 1 on 8th and another 1 on 11th. Fish were performing well until recently. The stocks were transferred from Portree in January 2021. Mortalities are normally removed by Uplift systems and stored in skips at the shorebase for disposal. Mort transfer is by Billy Bowie, usually to Dundas Bros. The recent increase in morts has resulted in removal by contractors using Uplifts and brails. The increase in mortalities is also being transported in tankers following removal by boat via Kishorn. Discussed biosecurity issues with compromised brail and improvements were indicated. Low presence of CMS detected in some fish from PCR samples in August and cage 1 has since been harvested out as a precaution.

Treated with SLICE in January, March, May and July. Had freshwater treatment in May and pen 13 in August. Also freshwater/salmosan treatment in two pens (9 & 16) in August. Optilicer in early July, and hydrolicer in early August then early September. Planning hydrolicer again in week 38. The site has been combatting unanticipated higher settlements of Chalimus and Pre-adult lice and are trying to prevent a build up of adult stages, although lice numbers have increased recently and lice damage is evident on a number of fish. Received veterinary advice in early September to conduct a treatment to combat sea lice accepting the potential mortality in fish which had been affected by the suspected micro jelly bloom which occurred in mid-August. Moribund fish present in all cages with cages 10 and 11 currently the worst affected. These cages are to be harvested out in week 38. Rest of cages will receive a Hydrolicer treatment. Pens are also receiving aeration.

Case No: 2021-0258 Site No: FS1342

Date of Visit: 16/09/2021 Inspector(s): [redacted]

Registration/Authorisation Details

1. Business/site details summary checked by site representative?	Y
2. Changes made to details?	N

Site Details (include cleaner fish for all sections)

Total No facilities		16	Facilities stocked		13	No facilities inspected		16
Species	SAL	LUM						
Age group	2020 S0	input 2021						
No Fish	366,872	54,000						
Mean Fish Wt	3 Kg	0.05 Kg						
Next Fallow Date (Site)		Spring 2022	Next Input Date (Site)			Autumn 2022		
Recent (last 4 wks) disease problems?				Y	Any escapes (since last visit)?			N
If yes, detail:	Gill issue following suspected micro jelly bloom suspect Lizzia blondina sp.							

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	28/07/2021
3. Are records complete and correctly entered?	Y
4. Are movement records available for dead fish and waste?	Y
5. Are records complete and correctly entered?	Y
6. Are health certificates for introductions (outwith GB) available?	N/A

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?	Y
2. How are mortalities disposed of?	Whole fish - Dundas Chemicals
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	Mortality wk33:0.14%, wk34:0.29%, wk35: 4.54%. Wk36:6.57%(to10/09/21)
5. Evidence of recent increased/atypical mortalities?	Y

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

Compromised gills and husbandry operations wk36 pen 1 10.98%, pen 9 16%, pen 14 31% (across site ranging from ~1% - 31% per cage. Prior to issue in August morts ranging from 0.06 - 0.29% per cage/week.

6. Any other peaks in mortality during period checked?	Y
If yes, detail:	0.82% following husbandry operations in week 32
7. Have increased (unexplained) mortalities been reported to vet or FHI?	N/A
If yes, detail action:	
8. Have 'mortality events' been reported to FHI? If no, enter details on mortality events sheet.	Y

Treatments and Medicines Records

1. Recent treatments (see comment)?	Y
If yes, detail:	T.M.S., Salmosan, Slice
If other, detail:	
2. Medicines records available for inspection?	Y
3. Are records complete and correctly entered?	Y
4. Are fish in a withdrawal period?	Y
5. If yes, what treatment(s)?	T.M.S.
If other, detail:	
6. Are medicines stored appropriately?	Y

Biosecurity Records

1. Biosecurity records available for inspection?	Y
2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?	Y
3. Has the manner and period in which the APB will notify Scottish Ministers or veterinary professional of any *increased* (*unexplained)* mortality at the site been included?	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 *how* and *when* that will be notified to Scottish Ministers?	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)?	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.)?	Y
7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?	Y
8. Have the biosecurity procedures been adequately implemented on site?	N
If no, detail:	Large biomass mortality removal procedures allowed a breach of mortality containment.

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	Y
If yes, detail (if not detailed under recent disease problems).	Some AGD present but not causing problem,
Records checked between:	01/01/21 - 10/09/21

Case no:	2021-0258	Site No:	FS1342	Date of visit/ Sampling:	16/09/2021	16/(							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	15:00:00	16:00:00	Inspector:		VMD No.	0							
Environmental conditions:	1	Dry	2	Sunny	3	Indoors	4		5				
Summary samples	HIST	Y	BA	Y	MG	Y	VI		PA		Total Samples		

Add Fish/Pools - click

	Pool/Fish No	F1	F2	F3	F4	F5	P1						
	Fish nos	1	2	3	4	5							
	Pool Group	P1	P1	P1	P1	P1							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL							
	Average weight	3Kg	3Kg	3Kg	3Kg	3Kg							
	Sex	N/A	N/A	N/A	N/A	Male							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Portree (FS0708)	Portree (FS0708)	Portree (FS0708)	Portree (FS0708)	Portree (FS0708)							
	Facility No	10	10	10	10	10							

09/2021 Additional Sample Information:

6 Total Tests assigned 3

Case no: 2021-0258 Site No: FS1342 Method of killing: Anaesthetic

Date of visit: 16/09/2021 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)				1 hr	1 hr	1 hr					
External Signs											
Behaviour	Moribund	S	S	S	S	S					
	Lethargic	S	S	S	S	S					
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark					M					
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum	M	S	M	M	M					
	Base of fins										
	Elsewhere										
Eyes	Exophthalmic										
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic										
Gills	Pale	S	M	W	W	W					
	Zoned		M		W	W					
	Necrotic										
Lesions	Flank										
	Elsewhere										
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers										
Internal Signs											
Ascites	Clear										
	Bloody	M									
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem										
	Gross haem										
	Tissue breakdown										
	Enlarged										
	Colour number(s)	2	4	4	3	3					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem				M						
	Tubules mauve					M					
	Lack of fat										
Spleen	Enlarged	W									
	Granulomas										
Gut	No food present	S	S	S	S	S					
	Yellow pseudo-faeces	S	S			S					
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey										
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2021-0258

Date of visit: 16/09/2021

S for strong presence: **M** for medium presence: **W** for w

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

Additional comments:

F1 - Flaccid heart, F4 - photo of pyloric ceaca, F5 - mature male grilse

Case Number:	2021-0258		Site No:	FS1342	Insp:	
Date of Visit	16/09/2021					

		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	
	Frequency of movements on from equivalent zone or compartment including third country	0	9	18	26	
	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		1
	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				
	Common processes with other farms	3				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		1
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		19
				Rank		

Site No: FS1342

Case No: 2021-0258

Nature of non-compliance:

Action taken (FHI):

Non-compliance relevant to (delete): VirologyMolGen/Bacteriology/Histology/Parasitology

Case No: 2021-0258 Date of visit: 16/09/2021

Site No: FS1342 Inspector:

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
AGD PCR	1/5	24/09/2021		23/09/2021		23/11/2021		
P. theridion, Salmon poxvirus PCR	5/5	24/09/2021		23/09/2021		23/11/2021		
IPN, IHN, ISA, VHS, SAV PCR	0/1	24/09/2021		23/09/2021		23/11/2021		
VSPE Kidney F1-3 & 5	4/5	14/10/2021		14/10/2021		23/11/2021		
VSPE Kidney F1 &3	2/5	14/10/2021		14/10/2021		23/11/2021		
VSPE Kidney F2	1/5	14/10/2021		14/10/2021		23/11/2021		
Histo GPAT	5/5	14/10/2021		14/10/2021		23/11/2021		
Histo SPVH	1/5	14/10/2021		14/10/2021		23/11/2021		
Histo PLAN	1/5	14/10/2021		14/10/2021		23/11/2021		

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA	23/11/2021		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0169	**DATE OF VISIT**	16/09/2021
SITE NO	FS1342	**SITE NAME**	West Strome
CASE NO	20210258	**INSPECTOR**	[redacted]

Section 1: Summary

The above site was inspected in conjunction with a veterinary officer from the Animal and Plant Health Agency (APHA) following a report of a potential welfare issue and a report of increased mortality by the farm operator. A separate report will be issued by the Animal and Plant Health Agency. During the physical inspection of all epidemiological units, five fish were removed for diagnostic sampling.

Histopathology examination revealed mild gill pathology, with one fish displaying evidence of salmon gill poxvirus and another fish had a plankton-like structure on the gill. Due to the gill health issues observed on site, samples were screened for *Neoparamoeba perurans*, salmon gill poxvirus (SPGV) & *Paranucleospora theridion* (syn. *Desmozoon lepeophtherii*) by QPCR and tested positive for all three pathogens.

A *Vibrio* sp. was identified from kidney material from Fish 1 – 3 and 5, however, the level of growth of this isolate was significant but the purity would not suggest it would be implicated as a primary pathogen. A second *Vibrio* sp. was identified from kidney material from Fish 1 and 3 and a third *Vibrio* sp. was identified from the kidney material of Fish 2.

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

Section 2: Case Detail

Observations

The site had taken veterinary advice to undertake husbandry operations to reduce the sea lice burden at the beginning of September. This had resulted in an increase in morbidity and mortality in the stocks which had been recovering from a gill health issue which had occurred in August.

During the site inspection it was evident that a significant proportion of the fish were moribund and some were demonstrating evidence of lesions due to sea lice. Four cages of fish had been harvested between the 7th and 11th of September. Two cages were observed to be affected to a greater extent than others and these were scheduled for harvest in the week following the inspection. A number of moribund fish were removed for examination and five were chosen for diagnostic sampling.

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

Clinical signs of disease included morbidity and lethargy present in all 5 fish sampled. All five fish also had haemorrhaging on the ventrum and pale gills. There was also zonation of the gills of fish 2, 4 and 5. Fish 5 was a mature male grilse.

Internally, no food was evident in the gut of the five fish and pseudo-faeces was present in the gut of Fish 1, 2 and 5. Fish 1 had some bloody ascites within the body cavity, an enlarged spleen and a flaccid heart. Petechial haemorrhaging of the pyloric caeca was evident in Fish 4 and Fish 5 had inflammation in the tubules of the pyloric caeca.

Records

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 remotely to ensure that the conditions of authorisation for your Aquaculture Production Business (APB) are being met:

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 Scotland were available for inspection.

The biosecurity measures plan for the site was inspected and found to be inadequately implemented. A separate letter will be issued regarding this issue.

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

Samples were collected from five fish according to the table below:

Fish number	Pool number	Facility number	Species	Stage	Origin
F1 - 5	P1	10	Atlantic salmon	2020 S0 Grower 3 Kg	Portree

Results

Bacteriology: Kidney and gill material from Fish 1 – 5 were inoculated onto appropriate media for the isolation of bacteria.

A *Vibrio* sp. was identified on plates taken from kidney material of fish 1-3 and 5. The level of growth of this isolate was significant, however, the purity would not suggest it would be implicated as a primary pathogen.

A second isolate of *Vibrio* sp. was identified on plates taken from kidney material of fish 1 and 3 and a third *Vibrio* sp. was identified on plates taken from kidney material of fish 2. The level of growth and purity would not suggest these would be implicated as primary pathogens.

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

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

Salmon gill poxvirus (SGPV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.59	24.39	24.54	24.57	POSITIVE
F2	20.16	24.01	24.15	24.38	POSITIVE
F3	19.92	24.28	24.35	24.30	POSITIVE
F4	19.68	22.95	22.94	23.08	POSITIVE
F5	20.24	25.27	25.28	25.24	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV) and viral haemorrhagic septicemia virus (VHSV).

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

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	-	-	-	-	NEGATIVE
F2	20.16	34.82	35.39	34.80	POSITIVE
F3	-	-	-	-	NEGATIVE
F4	-	-	-	-	NEGATIVE
F5	-	-	-	-	NEGATIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	19.59	27.96	28.07	28.24	POSITIVE
F2	20.16	27.16	27.13	27.26	POSITIVE
F3	19.92	28.76	28.84	28.74	POSITIVE
F4	19.68	30.30	30.32	30.34	POSITIVE
F5	20.24	30.82	30.69	30.53	POSITIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from Fish 1 - 5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Several individual lamellae displaying epithelial thickness (F1). F2, F3 and F4 exhibited mild hyperplasia and lamellar fusion, mainly noted at the distal part of the gill filament. F4 also displayed several areas with fusion of adjacent lamellae and some nuclei exhibiting chromatin margination

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science

(potentially associated with salmon gill poxvirus presence), In between two lamellae, a structure resembling plankton (potentially *Lizzia* sp.) was observed. Several aneurysmal dilations were observed (F1, F2, F3). F5 displayed some autolysis artefacts which hindered the reading.

Skin & Muscle: Within normal range.

Heart: Within normal range.

Gut and pyloric caeca: Some inflammatory cell infiltration, potentially associated with vaccine administration (F2). Some cell sloughing (F3, F5) (potentially associated with post-mortem artefacts).

Pancreas: Within normal range.

Liver: Mild diffuse hepatocyte vacuolation (F2, F3, F4, F5).

Kidney: Some reduction of the haematopoietic tissue. F1, F3: not in section.

Spleen: Within normal range.

Brain and Eye: Not sampled.

Signed: [redacted] Date: 23/11/2021

Fish Health Inspector

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at https://www.gov.scot/publications/fish-health-inspectorate-service-charter/

Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Fax – 0131 244 0944 Email – ms.fishhealth@gov.scot
Website - www.gov.scot/Topics/marine/science


VWR® Nitrile light gloves
Nitrile light gloves
vwr