

Case No: 2023-0495 Date of visit: 01/11/2023

Time spent on site: 4 hours Main Inspector: [Redacted]

Site No: FS0549 Site Name: Tanera
Business No: FB0125 Business Name: Scottish Sea Farms Ltd

Case Types: 1 REP 2 DIA 3 4 5 6

Water Temp (°C): 11.6 Thermometer No: T155 FHI 045 completed

Observations: Region: HI Water type: S CoGP MA: M-10

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:

All fish on site from Barcaldine.

Nevis sites being stocked this week

80 m circles on site

FW well boat treatment at site today. Peroxide last week

Fergusons boat removing current mortalities. Final disposal destination is Dumfries.

Mort; 8/10 0.75%; 15/10 2.55%, 22/10 6.45; 29/10 12.33%. 2/11 3.53 (part week)

Individual cages worse than others. Aquagen fish in pens 1,4 ,5 and 6 worst effected.

AGD peroxide (Paramove)treatment 23/9- 26/9 - tarp treatment; Peroxide July, Current treatments peroxide and fresh water

Health reports - 11/7/23 vet report lamellar lesions on gills; August test results AGD Moderate to High

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="12"/>	Facilities stocked	<input type="text" value="12"/>	No facilities inspected	
Species	<input type="text" value="sal"/>				
Age group	<input type="text" value="2023 Q1&Q2"/>	<input type="text" value="2023 Q1"/>			
No Fish	<input type="text" value="89,744"/>	<input type="text" value="140,856"/>			
Mean Fish Wt	<input type="text" value="1.9kg"/>	<input type="text" value="2.26kg"/>			
Next Fallow Date (Site)	<input type="text" value="2024"/>		Next Input Date (Site)	<input type="text" value="not known"/>	
Recent (last 4 wks) disease problems?			<input checked="" type="checkbox"/>	Any escapes (since last visit)?	
If yes, detail:	<input type="text" value="gill issues AGD and PGD, jelly fish damage"/>				

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)?

If yes, detail:

TMS

If other, detail:

2. Medicines records available for inspection?

3. Are records complete and correctly entered?

4. Are fish in a withdrawal period?

5. If yes, what treatment(s)?

TMS

If other, detail:

6. Are medicines stored appropriately?

Biosecurity Records

1. Biosecurity records available for inspection?

2. Has the manner and frequency of mortality removal, recording and safe disposal been considered?

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?

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?

5. Has the health status of aquaculture animals being stocked on the farm site been covered (equal or higher health status, certification if required)?

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.)?

7. Is documentation available regarding the measures in place to maintain the physical containment of aquaculture animals held on site?

8. Have the biosecurity procedures been adequately implemented on site?

If no, detail:

Results of Surveillance

1. Has any animal health surveillance been carried out by, or on behalf of, the business?

2. If yes, are results available for inspection?

3. Any significant results?

If yes, detail (if not detailed under recent disease problems).

AGD

Records checked between:

26/4/23- 2/11/23

4
N
Y
Y
Y
Y
Y
N/A
Y
Y
Y
N
N/A
Y

Y
Y
Y
Y
Y
Y
Y
Y

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							
Pool Group												
Species	SAL	SAL	SAL	SAL	SAL							
Average weight	2KG	2KG	2KG	2KG	2KG							
Sex												
Water Type	SW	SW	SW	SW	SW							
Stock Details		barcaldine	barcaldine	barcaldine	barcaldine	barcaldine						
	Stock Origin											
Facility No	6	6	6	6	6							

11/2023 Additional Sample Information:
 HISTOLOGY - two gill samples in hist pot 4 from fish 4 and fish 5.

Total Tests assigned

Case no: 2023-0495

Site No: FS0549

Method of killing: Percussive

Date of visit: 01/11/2023

Inspector(s):

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	S	S	S	S	S				
	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	S	S	S	S	S				
	Zoned									
	Necrotic									
Lesions	Flank									
	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									
	Gross haem									
	Tissue breakdown									
	Enlarged									
	Colour number(s)	6	6	6	6	6				
	Granulomas									
	Lesions									
Pyloric caeca	Petechial haem									
	Tubules mauve									
	Lack of fat									
Spleen	Enlarged									
	Granulomas									
Gut	No food present	S	S	S	S	S				
	Yellow pseudo-faeces									
	External haem									
	Internal haem									
Body wall	Haemorrhaging									
Swim bladder	Haemorrhaging									
	Fluid filled									
Kidney	Swollen									
	Grey									
	Granular									
	Liquefied									
General	Parasites present									
	Anaemia									

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Additional comments:

Pale ragged gills for all fish. No food but fish on starve for fw treatment

Case No: **2023-0495** Date of visit: **01/11/2023**
 Site No: **FS0549** Inspector: **[REDACTED]**

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 nd Insp
VHS	0/5	07/11/2023		07/11/2023		30/11/2023		
IPN	0/5	07/11/2023		07/11/2023		30/11/2023		
ISA	0/5	07/11/2023		07/11/2023		30/11/2023		
AGD	5/5	07/11/2023		07/11/2023		30/11/2023		
SGPV	5/5	07/11/2023		07/11/2023		30/11/2023		
Para Ther	5/5	07/11/2023		07/11/2023		30/11/2023		
IHN	0/5	07/11/2023		07/11/2023		30/11/2023		
PMCV	0/5	07/11/2023		07/11/2023		30/11/2023		
SAV	0/5	07/11/2023		07/11/2023		30/11/2023		
LPAT	5/5	14/11/2023		14/11/2023		30/11/2023		
GPAT	5/5	14/11/2023		14/11/2023		30/11/2023		
EPIT	1/5	14/11/2023		14/11/2023		30/11/2023		
CGDH	5/5	14/11/2023		14/11/2023		30/11/2023		
AMGD	5/5	14/11/2023		14/11/2023		30/11/2023		
Vibrio sp.	5/5	20/11/2023				30/11/2023		

Report Summary			
Case Type	Date	Insp	2 nd Insp
Diag Rep	30/11/2023		



FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0125	DATE OF VISIT	02/11/2023
SITE No	FS0549	SITE NAME	Tanera
CASE No	20230495	INSPECTOR	[REDACTED]

Section 1: Summary

Tanera was visited following reports by the company of increased mortality levels. On inspection moribund fish were observed at the pen perimeters and five were removed for diagnostic examination.

Histopathological examination revealed features consistent with mild, multifocal, hyperplastic branchitis, (amoebic gill disease) which was confirmed by qPCR. Hepatocellular necrosis and minor myocarditis also observed.

Samples tested by qPCR were also positive for salmon gill poxvirus (SGPV) and *Paranucleospora theridion*.

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

Tanera was visited following several weeks of mortality levels over the reporting threshold. This had peaked the week prior to the visit, week ending 29/10/23, at 12.33% and had been attributed to gill health issues.

On inspection of the pens a handful of moribund fish were observed at the perimeters, however the mortality socks on site were full of dead fish. Five moribund fish were removed from the worst effected pen for diagnostic examination.

All five fish had pale ragged gill but no other gross pathology was observed.

Samples

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

Fish number	Facility number	Species	Stage	Origin
1-5	6	Atlantic salmon	2023 Q1 @ 2kg	Barcaldine

Results

Bacteriology: Kidney and gill material from five fish was inoculated onto appropriate media for the isolation of bacteria.

Vibrio sp. was identified on plates taken from gill material of 5/5 fish. The level and purity of growth would not suggest this bacterium would be implicated as the primary pathogen.

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	22.33	31.77	31.86	31.85	POSITIVE
F2	22.94	35	34.70	34.61	POSITIVE
F3	23.12	35.86	35.62	35.01	POSITIVE
F4	23.46	31.65	31.68	31.61	POSITIVE
F5	22.09	36.56	37.25	37.43	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), 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).

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.33	24.90	25.02	25.00	POSITIVE
F2	22.94	26.04	26.12	26.12	POSITIVE
F3	23.12	26.20	26.10	26.19	POSITIVE
F4	23.46	26.26	26.27	26.37	POSITIVE
F5	22.09	27.18	27.18	27.24	POSITIVE

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.33	29.67	29.62	29.78	POSITIVE
F2	22.94	31.36	31.42	31.44	POSITIVE
F3	23.12	33.52	34.04	33.66	POSITIVE
F4	23.46	36.01	35.45	35.71	POSITIVE
F5	22.09	32.33	32.37	32.46	POSITIVE

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

The following histopathological changes were observed:

Gill: Lamellar hyperplastic branchitis, moderate to marked, multifocal (F1-F5), some lamellar vascular disturbances (F4). F3 also displayed areas of cellular necrosis. Presence of several amoeboid cells resembling *Neoparamoeba perurans* observed in all fish and few basophilic epithelial inclusions (likely epitheliocystis) F1. Aneurysmal dilation/lamellar telangiectasia observed in all fish.

Skin & Muscle: Within normal range.

Heart: Minor, multifocal, myocarditis (F1). Some thrombi nests in ventricular chamber. Minor to mild epericarditis (F1, F2). F1: No atrium present.

Gut and pyloric caeca: Mild peritonitis (F1).

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis, mild, multifocal to coalescence (F1-F5), small focal sinusoidal congestion (F3), minor cuffing (F1), hepatocellular vacuolation (macrovesicles), mild, diffuse (F2).
Kidney: Focal area of congestion, one renal tubule dilated (F1), some renal tubules with hyaline droplets on the lining epithelium(F4).

Spleen: Within the normal range.

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

Signed:



Date: 30/11/2023

Fish Health Inspector

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/resources/documents/2019/04/Fish_Health_Inspectorate_Service_Charter.pdf)







