Case No: 2024-0171 Date of visit: 29/05/2024

Time spent on site: 5h Main Inspector: [redacted]

Site No: FS0908 Site Name: Quanterness
Business No: FB0095 Business Name: Cooke Aquaculture Scotland Ltd

Case Types: 1 STI 2 DIA 3 4 5 6

Water Temp (°C): 11.2 Thermometer No: T173 FHI 045 completed

Observations: Region: OR Water type: S CoGP MA: O-2

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:

Sal peaks in mortality 2023: wk 19 1974 (1.73%)predator/handling , wk 20 1242 (1.11%) predator/other, wk 29 1132 (1.08%) predator/other, wk 30 1397 (1.35%) mainly predator, wk 31 2054 (2.01%) mainly predator.

The site was inspected as it had been served an IDN (IDN2024008) on the 24/5/2024 due to being located within one tidal excursion of Meil Bay (FS0597) that was served a CDN (CDN2024002) following confirmation of a clinical outbreak of BKD. The inspection was to determine if there was clinical signs of BKD as this would lead to the revocation of the IDN.

On inspection of the stock a number of lethargic fish were observed therefore diagnostic samples were taken with additional samples to screen for BKD.

On inspection of the movement records it was detailed that an input of 216,276 smolts from Clachbreac (FS0892) had occurred on the 28/5/2024 without permission having been applied for, this will be dealt with outwith the case.

The fish were transferred due to fungus levels at source site and lack of other sites with space.

Morts taken to Dounby yard for storage, moved to Pelagia or biogas.

One fw treatment administered when stocks were moved to accommodate new input. Treatment was for gills and lice.

Case No:	2024-0171	Site No:	FS0908
Date of Visit:	29/05/2024	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	8	Facilities stocked	8	No facilities inspected	8		
Species	SAL						
Age group	2024 S1						
No Fish	571,570						
Mean Fish Wt	250g						
Next Fallow Date (Site)	Dec 2025	Next Input Date (Site)	April 2026				
Recent (last 4 wks) disease problems?	Y	Any escapes (since last visit)?	N				
If yes, detail:	Fungus on input						

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	06/02/2023
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?	Other (detail)
If other detail:	Pelagia Shetland or biogas
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	wk 21 759 (0.21%), wk 20 1271 (0.36%), wk 19 737 (0.21%), wk 18 1691 (0.47%) mainly predator/other.
5. Evidence of recent increased/atypical mortalities?	N
If yes, facility nos/no mortality per facility/no stock per facility/reason:	
6. Any other peaks in mortality during period checked?	Y
If yes, detail:	see additional information
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.	N

Treatments and Medicines Records

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

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?	Y
2. If yes, are results available for inspection?	Y
3. Any significant results?	N
If yes, detail (if not detailed under recent disease problems).	

Records checked between:	6/2/2023 to 29/5/2024

Case no:	2024-0171	Site No:	FS0908	Date of visit/ Sampling:	29/05/2024	29/(							
Priority samples:	VI		BA	x	PA		MG		HI				
Time sampling starts/ends:	12:30:00	14:00:00	Inspector:		VMD No.								
Environmental conditions:	1	Indoors	2		3		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							
	Fish nos	1	2	3	4	5							
	Pool Group	P1	P1	P1	P1	P1							
Stock Details	Species	SAL	SAL	SAL	SAL	SAL							
	Average weight	100g	100g	100g	100g	100g							
	Sex	N/A	N/A	N/A	N/A	N/A							
	Water Type	SW	SW	SW	SW	SW							
	Stock Origin	Clachbreac	Clachbreac	Clachbreac	Clachbreac	Clachbreac							
	Facility No	8	8	7	7	7							

05/2024	Additional Sample Information:
	Dry tube of kidney taken. Freshwater plates taken due to fish being in the sea for less than 24 hours. BKD sample taken due to observation of slightly grey granular kidney and site was being inspected to conduct STI.

5 Total Tests assigned 5

Case no: 2024-0171 Site No: FS0908 Method of killing: Percussive

Date of visit: 29/05/2024 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	M	M	M	M	M					
	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)	4	4	4	4	4					
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve		S			S					
	Lack of fat		S			S					
Spleen	Enlarged										
	Granulomas										
Gut	No food present										
	Yellow pseudo-faeces		S			S					
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging										
	Fluid filled										
Kidney	Swollen										
	Grey	W	W	W	W	W					
	Granular	W	W	W	W	W					
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2024-0171

Date of visit: 29/05/2024

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:

split/eroded fins noted.

Case No: 2024-0171 Date of visit: 29/05/2024

Site No: FS0908 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
BKD Renibacterium salmoninarum (PCR) - BKDP	0/5	31/05/2024		31/05/2024		27/06/2024		
ISA (real time qPCR - heart & kidney) - ISAQ	0/5	31/05/2024		31/05/2024		27/06/2024		
VHS (PCR) - VHSP	0/5	31/05/2024		31/05/2024		27/06/2024		
IHN (PCR) - IHNP	0/5	31/05/2024		31/05/2024		27/06/2024		
IPN (PCR) - IPNM	5/5	04/06/2024		04/06/2024		27/06/2024		
Salmonid alphavirus (SAV) (PCR) - SALP	0/5	04/06/2024		04/06/2024		27/06/2024		
Vibrio species (culture) - VSPE	5/5	17/06/2024		17/06/2024		27/06/2024		
Unidentified bacteria (culture)(historical) - UBAC	5/5	17/06/2024		17/06/2024		27/06/2024		
Adhesions - ADHE	5/5	17/06/2024		17/06/2024		27/06/2024		
Liver pathology - LPAT	5/5	17/06/2024		17/06/2024		27/06/2024		
PMCV	0/5	27/06/2024		27/06/2024		27/06/2024		

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA, STI	27/06/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0095	**DATE OF VISIT**	29/05/2024
SITE NO	FS0908	**SITE NAME**	Quanterness
CASE NO	20240171	**INSPECTOR**	[redacted]

Section 1: Summary

On inspection of the site approximately 100 moribund fish were observed in three recently stocked pens, five were removed for further examination and subsequent diagnostic sampling.

Histopathological examination revealed mild peritonitis potentially associated with vaccine administration.

Infectious pancreatic necrosis (IPN) was detected in F1-F5 by qPCR however, this would likely be due to recent vaccination prior to transfer and would support the histopathological observations.

Vibrio sp. was identified but would not be implicated in morbidity.

The site had been served an initial designation notice (IDN) due to being within one tidal excursion of a site where the presence of bacterial kidney disease (BKD) had been confirmed. Samples were taken and screened for the presence of *Renibacterium salmoninarum* by qPCR, the result of these tests were negative therefore the IDN was revoked.

If clinical signs of BKD are observed on the site, the Inspectorate must be informed immediately.

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 was inspected to determine if a clinical outbreak of bacterial kidney disease (BKD) was occurring as it is located within one tidal excursion of a site where the presence of BKD had been confirmed.

On inspection of the site three pens had approximately 100 moribund fish in each pen, all three pens had recently been stocked from freshwater, five fish were removed for diagnostic sampling.

Externally all fish were dark in appearance. Internally the pyloric caeca of F2 and F5 were lacking fat with mauve tubules and with yellow pseudo faeces also present. All five fish had slightly grey kidneys that were also granular in texture.

Samples

Samples were collected from F1-F5 fish according to the table below:

UKAS Accredited Inspection Body - Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Fish number	Facility number	Species	Stage	Origin
F1-F2	8	Atlantic salmon	100g; 2024 S1	Clachbreac
F3-F5	7	Atlantic salmon	100g; 2024 S1	Clachbreac

Results

Bacteriology: Kidney, gill and spleen material from F1-F5 was inoculated onto appropriate media for the isolation of bacteria.

The following bacterium was isolated:

- *Vibrio* sp.: F1-F5 (kidney)

Tissue samples from F1-F5 were tested for segments of nucleic acid indicative of the presence of *Renibacterium salmoninarum* using real-time PCR (qPCR).

The result of these tests were negative.

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	14.81	35.25	35.22	34.90	**POSITIVE**
F2	14.01	34.37	34.54	34.14	**POSITIVE**
F3	14.33	37.65	37.75	37.79	**POSITIVE**
F4	14.28	34.29	33.89	33.68	**POSITIVE**
F5	14.79	36.49	36.73	35.17	**POSITIVE**

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

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

Histopathological examination revealed the following:

Gill: Within the normal range.

Skin & Muscle: Within the normal range.

Heart: Within the normal range.

Gut and pyloric caeca: Fibrous adhesions (likely associated with vaccine administration) observed in all fish.

UKAS Accredited Inspection Body - Type C No. 0269
Marine Laboratory, 375 Victoria Road, Aberdeen, AB11 9DB
Tel – 0131 244 3498 Email – ms.fishhealth@gov.scot
Website - https://www.gov.scot/policies/fish-health-inspectorate/

Liver: Sinusoidal hyperaemia observed mainly at the edge of the liver (F4-F5). Hepatocellular vacuolation (macrovesicles), ranging from mild to moderate, diffuse (F1-F5).

Kidney: Within the normal range.

Spleen: Capsulitis (likely associated with vaccine administration), mild, multifocal (F2-F5).

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

Signed: [redacted] Date: 27/6/2024

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)

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