Case No:	2023-0357	Date of visit:	09/08/2023
Time spent on site:	6 hours 30 minutes	Main Inspector:	[redacted]
Site No:	FS0629	Site Name:	Poll Na Gille
Business No:	FB0119	Business Name:	Mowi Scotland Ltd

Case Types: 1 DIA 2 REP 3 4 5 6

Water Temp (°C): 14.5 Thermometer No: T155 FHI 045 completed

Observations: Region: ST Water type: S CoGP MA M-40

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:

Mortalities removed by boat to Kames pier - uplift by Billy Bowie for onward disposal.

Lost 34% of stock since last inspection (Nov 2022). 20% at November / December time attributed to piscirickettsia. Lesions and thinner fish continuing through cycle.

Mortality - week/no: 32 - 1.19% (to 8/8/23 only); 31 - 4.88%, 30 - 6.14%; 29 - 1.37%; 28 - 1.93%; 27 - 1.07%; 26 - 0.53%. also week 12 - 0.9%; week 1 - 1%.

Due to increased sea lice on site, specifically caligus, Alphamax treatment conducted week 28.

Recent mortality higher in pens 5, 7, 8, 9 - up to 5k fish per cage for past two weeks (between 2.5k and 5k). Two weeks before this 650 - 2.5k. Recent mortality attributed to PD. Some mortality attributed to FW applications and actions to control sea lice.

Third party surveillance since Nov 2022 - PRV1, SAV PD, Tenacibaculum spp., Piscirickettsia, Moritella viscosa. Prior to this - Flaviovirus in cleaner fish and atypical frunculosis (cleaner fish or salmon - to check).

Treating for sea lice - combined adult female average 1.69 (gravids 0.76). Some recent increase in lice - being managed on site and site to fallow soon.

Mortality within cleaner fish - none reported since week 25 for wrasse and week 26 for lumpfish. Within lumpfish mortality generally less than / around 1% weekly with the exception of weeks 17 - 2.42%, 21 - 3.25%, 22 - 8.22% - increases mainly attributed to moritella. Within wrasse stocks moratlity generally <1% and mainly attributed to wounds and fin damage.

Case No: 2023-0357 Site No: FS0629

Date of Visit: 09/08/2023 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	12		Facilities stocked		11	No facilities inspected		7
Species	A. Salmon	Wrasse	Lumpfish					
Age group	2022 Q2	Mixed - wild	2021					
No Fish	291,791	3,678	16,125					
Mean Fish Wt	4.3kg	60-70g	60-80g					
Next Fallow Date (Site)	Sep 2023			Next Input Date (Site)		March/April 2024 - Q2s		
Recent (last 4 wks) disease problems?				Y	Any escapes (since last visit)?			N
If yes, detail:	Pancreas disease							

Movement Records

1. Movement records available for inspection?	Y
2. Date of last inspection:	08/06/22 in MB
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?	Biogas - Barkip
If other detail:	
3. Mortality records complete and correctly entered?	Y
4. Recent mortality (last 4 wks):	up to 6.14% in salmon for the site - see additional information.
5. Evidence of recent increased/atypical mortalities?	Y
If yes, facility nos/no mortality per facility/no stock per facility/reason:	
see additional information	
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?	Y
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:	Tricane for lice counts. FW applications and hydrolicer for sea lice
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)?	Tricane
If other, detail:	
6. Are medicines stored appropriately?	Y

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?	Y
If yes, detail (if not detailed under recent disease problems).	see additional information
Records checked between:	Nov 2022 to Aug 2023 (movement records since last sign off)

Case no:	2023-0357	Site No:	FS0629	Date of visit/ Sampling:	09/08/2023	09/0							
Priority samples:	VI		BA		PA		MG		HI				
Time sampling starts/ends:	10:30:00	12:30:00	Inspector:		VMD No.	0							
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	F6						
	Fish nos	1	2	3	4	5	6						
	Pool Group												
Stock Details	Species	SAL	SAL	SAL	SAL	SAL	SAL						
	Average weight	4.3000	4.3000	4.3000	4.3000	4.3000	4.3000						
	Sex	N/A	N/A	N/A	N/A	N/A	N/A						
	Water Type	SW	SW	SW	SW	SW	SW						
	Stock Origin	Inchmore	Inchmore	Inchmore	Inchmore	Inchmore	Inchmore						
	Facility No	3	7	8	8	5	1						

08/2023 Additional Sample Information:

6 Total Tests assigned 9

Case no: 2023-0357 Site No: FS0629 Method of killing: Percussive

Date of visit: 09/08/2023 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	6				
Time sampled after death (if > 45 minutes)		60	60	60	90	90	90				
External Signs											
Behaviour	Moribund	W	W	W	W	W	W				
	Lethargic	S	S	S	S	S	S				
	Hanging vertical										
	Spiralling										
	Flashing										
	Loss of equilibrium										
Body	Dark	S	S								
	Distended abdomen										
	Anorexic										
	Scale Oedema										
Opercula	Shortened										
	Flared										
Haemorrhaging	Throat										
	Ventrum	S	S	W	W	S	W				
	Base of fins										
	Elsewhere	S	S	W	W	S	W				
Eyes	Exophthalmic	W									
	Enophthalmic (sunken)										
	Cataract										
	Haemorrhagic				W		W				
Gills	Pale										
	Zoned										
	Necrotic				M						
Lesions	Flank										
	Elsewhere					S					
Vent	Inflamed										
	Trailing faeces										
Lice Load	Estimate numbers										
Internal Signs											
Ascites	Clear										
	Bloody										
Oedema	In tissues										
Heart	Pale/anaemic										
	Granulomas										
	Deformed										
Liver	Petechial haem		S	S	S	S					
	Gross haem		S	S	S						
	Tissue breakdown										
	Enlarged										
	Colour number(s)	4	7	7	7	3	7				
	Granulomas										
	Lesions										
Pyloric caeca	Petechial haem										
	Tubules mauve										
	Lack of fat										
Spleen	Enlarged						S				
	Granulomas										
Gut	No food present	S	S				S				
	Yellow pseudo-faeces		S								
	External haem										
	Internal haem										
Body wall	Haemorrhaging										
Swim bladder	Haemorrhaging		W								
	Fluid filled		S								
Kidney	Swollen										
	Grey					S					
	Granular										
	Liquefied										
General	Parasites present										
	Anaemia										

Case no: 2023-0357

Date of visit: 09/08/2023

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, F2, F3, F5 - eye damage. F1 &F2 - haemorrhaging over external body surface. F3 snout damage. F3 internal adhesions, clumped gills with slight haemorrhaging. F5 - scrubbed / damage to tail with some tail rot and damage on posterior flank - lesion sampled for becteriology and histology. F6 smaller sized fish but in good proportion.

Site No: FS0629

Case No: 2023-0357

Nature of non-compliance:

Action taken (FHI):

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

Case No: 2023-0357 Date of visit: 09/08/2023

Site No: FS0629 Inspector: [redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2nd Insp
VSPE (isolate A)	6/6	29/08/2023				23/10/2023		
VSPE (isolate B)	2/6	29/08/2023				23/10/2023		
EPIT	1/6	29/08/2023				23/10/2023		
GPAT	3/6	29/08/2023				23/10/2023		
HPAT	6/6	29/08/2023				23/10/2023		
CGDH	3/6	29/08/2023				23/10/2023		
LPAT	3/6	29/08/2023				23/10/2023		
SPAT	3/6	29/08/2023				23/10/2023		
MG AGD	1/6	29/08/2023				23/10/2023		
MG PRV	2/3	29/08/2023				23/10/2023		
MG IHN	0/6	29/08/2023				23/10/2023		
MG ISA	0/6	29/08/2023				23/10/2023		
MG VHS	0/6	29/08/2023				23/10/2023		
MG IPN	2/6	29/08/2023				23/10/2023		
MG SAV	1/6	29/08/2023				23/10/2023		
MG SAL POX	1/6	29/08/2023				23/10/2023		
MG PMCV	0/6	29/08/2023				23/10/2023		
MG PARA THER	5/6	29/08/2023				23/10/2023		
NSIG (isolate c)	1/6	14/09/2023				23/10/2023		
NSIG (isolate d)	1/6	14/09/2023				23/10/2023		
NSIG (isolate e)	1/6	14/09/2023				23/10/2023		
* and emailed 29/08/2023								

Report Summary			
Case Type	Date	Insp	2nd Insp
DIA	23/10/2023		
case review	27/03/2024		

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS NO	FB0119	**DATE OF VISIT**	09/08/2023
SITE NO	FS0629	**SITE NAME**	Poll Na Gille
CASE NO	20230357	**INSPECTOR**	[redacted]

Section 1: Summary

A diagnostic investigation was conducted at the Poll Na Gille site following reports of persistent increased mortality of up to 6.14% per week. Six fish were removed and sampled for diagnostic purposes.

Histopathological examination revealed features consistent with mild hyperplasic branchitis. Some features resemble the presence of salmonid alphavirus salmonid alphavirus (SAV) and a positive result for this virus was obtained through real-time PCR (qPCR). Hepatocellular necrosis with haemorrhage and necrotising splenitis and nephritis and bacterial dermatitis were also observed.

Samples collected also revealed positive results through real-time PCR (qPCR) for: piscine reovirus (PRV), salmon gill pox virus, *Neoparamoeba perurans* (AGD) and *Paranucleospora theridion*.

Two *Vibrio* spp. were isolated from the samples taken. The level and purity of growth observed would suggest these bacteria may be implicated in morbidity of one of the six fish sampled, however it does not suggest they are present as primary pathogens overall.

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

A diagnostic investigation was conducted following reports of increased mortality of >1% per week, reported for the previous 6 weeks prior to the inspection. Recent mortality had been attributed to pancreas pisease (PD) as well as some evidence of amoebic gill disease (AGD) and cardio myopathy syndrome (CMS).

Upon inspection of the site multiple moribund and lethargic fish were observed and 6 animals were selected for diagnostic investigation. Clinical and postmortem signs of disease included, dark colouration of the body (F1 & 2), haemorrhaging across the ventrum and external surface of all fish, exophthalmia (F1); haemorrhaging within the eye (F4 & 6); necrosis of the gills (F4); lesion on the tail (F5) which was damaged/scrubbed. Internal observations revealed petechial haemorrhaging across the liver (F2, 3, 4 & 5) with gross haemorrhaging also observed (F2, 3 & 4). The spleen appeared large in size (F6); the gut was absent of food (F1, 2 & 6) with yellow faecal casts present (F2). The swim bladder appeared haemorrhaged and was fluid filled (F2) and the kidney appeared grey in colour (F6).

Samples

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

Fish number	Facility number	Species	Stage	Origin
1	Pen 3	Atlantic salmon	2022 Q2 / 4.3 Kg	Inchmore
2	Pen 7	Atlantic salmon	2022 Q2 / 4.3 Kg	Inchmore
3 & 4	Pen 8	Atlantic salmon	2022 Q2 / 4.3 Kg	Inchmore
5	Pen 5	Atlantic salmon	2022 Q2 / 4.3 Kg	Inchmore
6	Pen 1	Atlantic salmon	2022 Q2 / 4.3 Kg	Inchmore

Results

Bacteriology: Kidney and gill material from all 6 fish, and lesion material from F5 were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated from the samples taken:

Vibrio sp. (Isolate A) was isolated from the gills of all 6 fish, the kidney of F1, F3 and F5 and the lesion of F5.

Vibrio sp. (Isolate B) was isolated from kidney of F3 and from both the kidney and lesion of F5.

The level and purity of growth observed would suggest these bacteria may be implicated in morbidity of fish 5 however it does not suggest they are present as primary pathogens overall.

No growth which matched the characteristics of *Piscirickettsia salmonis* was observed on 4/4 blood agar salt or 5/5 CHAB plates taken from kidney material.

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	17.49	21.16	21.25	20.45	POSITIVE
F2	17.36	26.13	26.11	26.02	POSITIVE
F3		-	-	-	NEGATIVE
F4		-	-	-	NEGATIVE
F5		-	-	-	NEGATIVE
F6		-	-	-	NEGATIVE

Salmonid alphavirus (SAV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1		-	-	-	NEGATIVE
F2		-	-	-	NEGATIVE
F3		-	-	-	NEGATIVE
F4		-	-	-	NEGATIVE
F5		-	-	-	NEGATIVE
F6	18.69	34.67	34.83	34.69	POSITIVE

Piscine reovirus (PRV)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	15.44	35.06	36.79	35.47	POSITIVE
F3	15.58	33.43	32.99	32.58	POSITIVE
F6		-	-	-	NEGATIVE

Salmon gill poxvirus

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1		-	-	-	NEGATIVE
F2		-	-	-	NEGATIVE
F3	22.13	25.09	25.14	25.49	POSITIVE
F4		-	-	-	NEGATIVE
F5		-	-	-	NEGATIVE
F6		-	-	-	NEGATIVE

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

Parasitology:

Tissue samples were tested for segments of nucleic acid indicative of the presence of the parasites *Neoparamoeba perurans* (AGD) and *Paranucleospora theridion* using real-time PCR (qPCR).

Neoparamoeba perurans (AGD)

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1		-	-	-	NEGATIVE
F2		-	-	-	NEGATIVE
F3	22.13	30.82	30.89	30.85	POSITIVE
F4		-	-	-	NEGATIVE
F5		-	-	-	NEGATIVE
F6		-	-	-	NEGATIVE

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

Paranucleospora theridion

Fish Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
F1	22.33	36.54	37.38	37.25	POSITIVE
F2	22.12	38.04	38.28	37.85	POSITIVE
F3	22.13	31.76	31.74	31.75	POSITIVE
F4	22.00	37.92	37.71	36.97	POSITIVE
F5	21.93	36.88	37.67	36.79	POSITIVE
F6		-	-	-	NEGATIVE

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from all six fish. The tissue samples were fixed in 10% neutral buffered formalin before being examined by light microscopy.

The following histopathological changes were observed:

Gill: Lamellar hyperplasia, very mild to mild, multifocal (F1, F3, F4) with haemorrhage, lamellar necrosis and vascular disturbance (F3, F4), few plankton-like structures observed among gill filaments (F1). Few basophilic epithelial inclusions (likely epitheliocystis) (F3). Some cartilage metaplasia observed in F4. Some aneurysmal dilation/telangiectasia (F1) and free blood among gill filament (F4). Post-mortem artefacts observed on F5.

Skin & Muscle: Skeletal red muscle myositis, mild, multifocal (F1) and skeletal white muscle myositis, mild, multifocal (F3) and in F6 observed in both skeletal muscles. F5 lesion: bacterial dermatitis, mild to marked, Gram-negative bacteria (F5).

Heart: Myocarditis, minor, multifocal (F1, F2, F3, F4, F6). Some thrombi nests (F1), epicarditis (F1-F4, F5). F2, F4: No atrium present.

Gut and pyloric caeca: Mild to marked cell sloughing (potentially associated with post-mortem artefact) observed in F2, F3, F4.

Pancreas: Within the normal range.

Liver: Hepatocellular necrosis with haemorrhage, mild, multifocal(F3), mild, diffuse, hepatocellular vacuolation (macrovesicles) (F2, F4).

Kidney: Interstitial cell (haemopoietic) necrosis, mild, multifocal to diffuse (F2, F3, F4, F5) with haemorrhage (F4). Some renal tubular dilation and shrunken glomeruli (F3).

Spleen: Necrotising splenitis, multifocal to diffuse (F3, F5). Some cuffing (F3), sightly congested (F6).

Brain: Not sampled.

Eye: Not sampled.

Signed: [redacted] Date: 20 October 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)

UKAS accredited testing laboratory No. 1964
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