

Case No:  Date of visit:

Time spent on site:  Main Inspector:

Site No:  Site Name:

Business No:  Business Name:

Case Types: 1  2  3  4  5  6

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

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

Dead/weak/abnormally behaving fish present?  If yes, see additional information/clinical score sheet.

Clinical signs of disease observed?  If yes, see additional information/clinical score sheet.

Gross pathology observed?  If yes, see additional information/clinical score sheet.

Diagnostic samples taken?

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

**Additional Case Information:**

A visit is being conducted at Meil Bay after receiving notification from the company that a positive BKD result has been found on site through a routine inspection with a Pharmaq vet. One fish was found with clinical signs out of the 4 sampled fish. The other 3 fish had clinical signs of CMS which is a known disease currently on site.

Before receiving the positive BKD result mortalities went to Dounby Yard but would be mixed with other sites mortality. Now mortalities and fish waste will be retrieved by divers as usual but will then be put into specific site mort bins and transferred to Dounby Yard where they will be kept in a separate area away from other site mortalities. Fish from BKD sites will then be transferred to Dundas Chemicals in a specific tanker which will then be fully disinfected afterward. All divers have separate gear for sites with BKD.

Mortality: Week 19 has no mortality due to bad weather and divers could not retrieve the morts. Week 20's mortality figure is made up of mortality from both week 19 and 20. Site is experiencing a high volume of seal presence on site - trying to grab fish through the nets (Seal Pro). The majority of mortalities on site are currently being attributed to CMS or seal damage.

Treatments: SLICE at the start of April (7th April) - week long treatment. T.M.S for health checks.

Health report: Internal - 29th April 2024 "Fish looked good and feeding well, CMS confirmed through PCR. Signs of CMS observed in some pens. AGD 0-2, non AGD (PGD) 1-3".

Recent in house histo report (from 29th April): 2/2 fish positive for CMS. Internal PCR results for CMS had a mixture of results for CMS but the majority were positive.

Through regular health checks by site staff, no clinical signs of BKD have been seen. Staff are also regularly checking moribunds for clinical signs but none have been seen.

During the physical examination of the site a small number of floating mortalities were observed in six cages (a total of 13 across the whole site). These mortalities were older and had started decomposing. Mortality removal has not occurred on site since the positive BKD result last week. Now that permission has been granted and the mortality removal SOP updated to comply with restrictions placed on site, divers are due on site tomorrow to carry out mortality removal.

Visibility into the pens was reduced due to the dull weather conditions and dark water. Of the fish seen, the majority were observed shoaling beneath the surface and those in pen 5 were observed during feeding and had a good feeding response. Across the whole site only 5 fish were observed as moribunds but only 3 could be caught using the hand net. All three caught were cut open and examined for any clinical signs of BKD. Two fish appeared healthy internally and so were not sampled. One fish when cut open had clear clinical signs of BKD including granulomas on the kidney and liver and contained bloody ascites in the body cavity. A diagnostic was carried out on this fish.

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"/>				
Age group	<input type="text" value="23 S1"/>				
No Fish	<input type="text" value="129,245"/>				
Mean Fish Wt	<input type="text" value="3.8kg"/>				
Next Fallow Date (Site)	<input type="text" value="September 2024"/>	Next Input Date (Site)	<input type="text" value="December 2024"/>		
Recent (last 4 wks) disease problems?		<input type="text" value="Y"/>	Any escapes (since last visit)?	<input type="text" value="N"/>	
If yes, detail:	<input type="text" value="CMS, 1 positive BKD result"/>				

**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)?  Y  
 If yes, detail: T.M.S
- 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?
- 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 info

Records checked between: 08/02/2023 - 22/05/2024

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											
Fish nos	1											
Pool Group												
Species	SAL											
Average weight	3.8kg											
Sex	N/A											
Water Type	SW											
Stock Details		Carness (FS0390)										
	Stock Origin											
Facility No	1											

05/2024 Additional Sample Information:  
A dry sample of kidney was taken in a universal tube for the labs.

1 Total Tests assigned 5


Case no: 2024-0144

Site No: FS0597

Method of killing: Percussive

Date of visit: 22/05/2024

Inspector(s):

Sheet Relevant: Y

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

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

Case no: 2024-0144

Date of visit: 22/05/2024

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

<b>Fish Number</b>													
Time sampled after death (if > 45 minutes)													
<b>External Signs</b>													
<b>Behaviour</b>	Moribund												
	Lethargic												
	Hanging vertical												
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	Loss of equilibrium												
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<b>Pyloric caeca</b>	Granulomas												
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	Petechial haem												
	Tubules mauve												
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	Fluid filled												
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	Grey												
	Granular												
	Liquefied												
<b>General</b>	Parasites present												
	Anaemia												



Additional comments:

Case No: 2024-0144

Date of visit: 22/05/2024

Site No: FS0597

Inspector: [Redacted]

Results Summary	Freq.	Date of Notification						
		Database	Insp	Phone	Insp	Writing	Insp	2 <sup>nd</sup> Insp
AGD	0/1	24/05/2024		27/05/2024		13/06/2024		
VHS	0/1	27/05/2024		27/05/2024		13/06/2024		
BKD	1/1	24/05/2024		24/05/2024		13/06/2024		
IHN	0/1	27/05/2024		27/05/2024		13/06/2024		
Paranucleospora theridion	1/1	24/05/2024		27/05/2024		13/06/2024		
Salmon gill poxvirus	0/1	24/05/2024		27/05/2024		13/06/2024		
SAV	0/1	27/05/2024		27/05/2024		13/06/2024		
IPN	0/1	27/05/2024		27/05/2024		13/06/2024		
ISA	0/1	27/05/2024		27/05/2024		13/06/2024		
PMCV	1/1	27/05/2024		27/05/2024		13/06/2024		
RSBA	1/1	13/06/2024		13/06/2024		13/06/2024		
GPAT	1/1	13/06/2024		13/06/2024		13/06/2024		
HPAT	1/1	13/06/2024		13/06/2024		13/06/2024		
KPAT	1/1	13/06/2024		13/06/2024		13/06/2024		
LPAT	1/1	13/06/2024		13/06/2024		13/06/2024		
SPAT	1/1	13/06/2024		13/06/2024		13/06/2024		

Report Summary			
Case Type	Date	Insp	2 <sup>nd</sup> Insp
DIA	14/06/2024		
STI	14/06/2024		

# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0095	<b>DATE OF VISIT</b>	22/05/2024
<b>SITE No</b>	FS0597	<b>SITE NAME</b>	Meil Bay
<b>CASE No</b>	20240144	<b>INSPECTOR</b>	██████████

### Section 1: Summary

A statutory bacterial kidney disease (BKD) inspection was carried out at the above site after receiving notification from the company that a positive BKD result has been found on site through a routine inspection with a Pharmaq vet.

During the inspection thirteen mortalities and five moribund fish were observed across the site. Three of the moribund fish were successfully caught and removed for initial inspection for clinical signs of BKD. One fish internally exhibited clinical signs for BKD and diagnostic sampling was conducted.

Histopathology examination revealed marked chronic granulomatous inflammation consistent with BKD.

The sampled fish tested positive using qPCR for *Renibacterium salmoninarum* (causative agent of BKD), *Paranucleospora theridion* and piscine myocarditis virus.

Following the positive PCR result for *Renibacterium salmoninarum* and the observed clinical signs of BKD the initial designation notice covering the site has been replaced with a confirmed designation notice.

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 company received one positive BKD result after a routine inspection by an external vet where a total of four fish were sampled. After receiving notification from the company of this positive result, a statutory inspection was carried out on site.

Mortality on site ranged between 0.86% and 0.7% across the last four weeks. The site is experiencing a high seal presence and the majority of mortalities on site are attributed to cardio myopathy syndrome (CMS) or seal damage where seals are grabbing and damaging fish through the nets.

During the physical inspection of all ten pens on site, a total of 13 floating mortalities were observed as mortality removal was halted after receiving the positive result and was only resumed once permission had been granted by the Fish Health Inspectorate. Visibility into the pens was reduced due to the dull weather conditions and dark water. Of the fish seen, the majority were observed shoaling beneath the surface and those in pen 5 were observed during feeding and had a good feed response.

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Across the whole site only five fish were observed as moribund but only three could be caught using the hand net. All three caught were cut open and examined for any clinical signs of BKD. Two fish appeared healthy internally and so were not sampled. One fish when cut open had clear clinical signs of BKD including granulomas on the kidney and liver and contained bloody ascites in the body cavity. A diagnostic was carried out on this fish.

### Samples

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

Fish number	Facility number	Species	Stage	Origin
1	1	Atlantic Salmon	3.8kg 2023 S1	Carness (FS0390)

### Results

**Bacteriology:** Kidney and gill material were inoculated onto appropriate media for the isolation of bacteria.

#### *Renibacterium salmoninarum* (BKD)

Fish Number	Endogenous control Cp value	Cp Values			Reported result
F1	22.77	20.77	20.79	20.79	POSITIVE

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

#### Piscine myocarditis virus (PMCV)

Fish Number	Endogenous control Cp value	Cp Values			Reported result
F1	15.58	18.95	19.13	19.13	POSITIVE

Tissue samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious pancreatic necrosis virus (IPNV), infectious salmon anaemia virus (ISAV), salmonid alphavirus (SAV), salmon gill poxvirus 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).

#### *Paranucleospora theridion*

Fish Number	Endogenous control Cp value	Cp Values			Reported result
F1	22.21	32.07	31.69	31.8	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. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Gill filaments displayed granulomatous response and presence of few Gram-positive bacteria colonies (resembling *Renibacterium* sp.). Aneurysmal dilation/telangiectasia and free blood among gill filaments.

Skin & Muscle: Few foci of red musculature inflammation.

Heart: Marked granulomatous inflammation.

Gut and pyloric caeca: Peritonitis, mild.

Pancreas: Within the normal range.

Liver: Moderate, multifocal, granulomatous inflammation with presence of few Gram-positive bacteria colonies (resembling *Renibacterium* sp.).

Kidney: Marked interstitial granulomatous inflammation with presence of few Gram-positive bacteria colonies (resembling *Renibacterium* sp.).

Spleen: Mild granulomatous inflammation.

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

Signed:



Date: 13/06/2024

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 \(www.gov.scot\)](https://www.gov.scot/policies/fish-health-inspectorate/)

# FISH HEALTH INSPECTORATE VISIT REPORT

## SUMMARY FOR INFORMATION OF SITE OPERATOR

<b>BUSINESS No</b>	FB0095	<b>DATE OF VISIT</b>	22/05/2024
<b>SITE No</b>	FS0597	<b>SITE NAME</b>	Meil Bay
<b>CASE No</b>	20240144	<b>INSPECTOR</b>	[REDACTED]

### Statutory Inspection

The above site was inspected to ascertain the status of the stock with regard to bacterial kidney disease (BKD) following a report from the company of a positive BKD result.

Samples were taken for diagnostic purposes. A separate report has been issued detailing the results of these tests.

All epidemiological units were inspected. Clinical signs associated with BKD were observed.

Following the observed clinical signs of BKD and results from the diagnostic examination the initial designation notice covering the site has been replaced with a confirmed designation notice.

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

Signed:

[REDACTED]

Date: 17/06/2024

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](https://www.gov.scot/policies/fish-health-inspectorate/) ([www.gov.scot](https://www.gov.scot))



Figure 1. Gills - slightly pale near the gill arch.



Figure 2. External view



Figure 3. Internal view - pale liver with granulomas, enlarged spleen, bloody ascites and kidney with granulomas



Figure 4. Very pale heart with granulomas