



Surveillance Report
Aker Biomarine Antarctic Krill Fishery

Certificate No.: MML-F-059

Intertek Moody Marine
June 2011

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1.0 GENERAL INFORMATION

Scope against which the surveillance is undertaken: MSC Principles and Criteria for Sustainable Fishing as applied to the Aker Biomarine Antarctic Krill Fishery

Species: Antarctic Krill (*Euphausia superba*)

Area: Southern Ocean, CCAMLR Area 48

Method of capture: Pelagic Trawl (continuous fishing system)

Date of Surveillance Visit:	26/27 May 2011; 13/14 June 2011			
Initial Certification	Date: 15 June 2010		Certificate Ref: MML-F-059	
Surveillance stage	1st	2 nd	3rd	4th
Surveillance team:	Lead Assessor: A Hough Assessor(s): P Medley			
Company Name: Address:	Aker Biomarine Oslo Norway			
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2.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This report contains the findings of the first surveillance cycle in relation to this fishery.

The client's response to the Conditions of Certification was set out in an Action Plan, which was appended to the final certification report. Action on this was examined as a part of this first surveillance. For each condition, the report sets out progress to date. This progress has now been evaluated by the Moody Marine assessment team ('Observations' and 'Conclusion') against the commitments made in the Action Plan. This assessment includes a re-evaluation of the scoring allocated to the relevant Performance Indicators in the original MSC assessment. Where the requirements of a condition are met, the Performance Indicators are re-scored and if the score is 80 or more, then the condition is closed.

Information regarding this years audit has been collected from the client and their consultants MRAG.

Item	Comments																												
1	Stock status																												
Observations	<p>Since 2009, the biomass estimates from the synoptic survey in 2000 have been re-estimated using an improved target strength model. This has raised the estimate of krill biomass within Area 48 from 37.3 million tonnes to 60.3 million tonnes. This has therefore also raised the precautionary catch limit based on the krill harvest control rule from 3.47 million tonnes to 5.61 million tonnes. However, the certification was awarded on the basis of the catch being less than the trigger level of 620 000 t, which remains unchanged. Given that the estimate of biomass has increased with the improved method, the catch trigger level appears more precautionary than when the original assessment was carried out.</p> <p>The catch trigger level has now been translated into biomass and fishing mortality estimates as per Condition 1 (see MRAG 2011). If catches at the level of the trigger were being removed from the stock, the level of depletion would still be less than 1%. It is likely that the depletion due to exploitation could not be detected against the background natural variation due to variable recruitment.</p> <p>Observed catches continue to be very low and well below the catch trigger (Table 2). In addition, the relevant working group has reviewed the catch statistics and found reported catches are reasonably accurate (TASO 2009) despite problems over conversion factors raised previously in the WG-EMM-08/46. This confirms that the current harvest control rule and information used for it are adequate to meet the requirements of the harvest strategy.</p> <p>In addition to the overall catch trigger, additional controls have been imposed on krill catch taken in the four sub-areas of Area 48 (CM 51-07) to avoid the whole catch, and therefore higher depletion, being imposed on a smaller area. This falls short of the SSMU system being developed, but partially meets the same objective.</p> <p>Table 1 Estimates of spawning stock biomass (median and 80% confidence interval) and fishing mortality (median and 95% CIs) and the probability of depletion ($SSB < 20\% SSB_0$) for the trigger level with different recruitment standard deviations for a 20 year projection. The recruitment standard deviations used were the current estimate (0.126) and 1.3 times the current estimate.</p> <table border="1" data-bbox="475 1205 1366 1350"> <thead> <tr> <th>Rec. SD</th> <th>SSB (%)</th> <th>SSB (%) CI(0.1-0.9)</th> <th>F</th> <th>F CI (0.025-0.975)</th> <th>Depletion (%)</th> </tr> </thead> <tbody> <tr> <td>0.126</td> <td>97.7%</td> <td>71.6-135%</td> <td>0.0159</td> <td>0.00750-0.0357</td> <td>0.010</td> </tr> <tr> <td>0.164</td> <td>97.1%</td> <td>62.8-157%</td> <td>0.0163</td> <td>0.00568-0.0487</td> <td>0.530</td> </tr> </tbody> </table> <p>Table 2 Reported nominal catch (tonnes) of Antarctic krill by season for area 48.</p> <table border="1" data-bbox="475 1442 1219 1527"> <thead> <tr> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> <th>2009/10</th> </tr> </thead> <tbody> <tr> <td>106549</td> <td>104586</td> <td>156521</td> <td>125825</td> <td>211974</td> </tr> </tbody> </table>	Rec. SD	SSB (%)	SSB (%) CI(0.1-0.9)	F	F CI (0.025-0.975)	Depletion (%)	0.126	97.7%	71.6-135%	0.0159	0.00750-0.0357	0.010	0.164	97.1%	62.8-157%	0.0163	0.00568-0.0487	0.530	2005/06	2006/07	2007/08	2008/09	2009/10	106549	104586	156521	125825	211974
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	<p>The assessment team also specified the following “<i>The scoring was carried out on the basis of the catch trigger level (as set by CCAMLR) of 620 000 t not being exceeded. Thus current performance of the fishery meets the requirements of the MSC standard. However, should catches approach and reach this trigger level it is recommended that an audit should be generated in order to review the fishery’s performance against the MSC standard at this level of exploitation. This audit would be additional to the required annual surveillance audits and would necessitate a close review of the performance indicators, including an assessment to ensure that the actual management responses expected at such a level of exploitation are commensurate with intentions and that the identified Principle 2 impacts at a higher level of exploitation are within defined limits.</i>” As catches remain significantly below this trigger level, it is confirmed that this action is not required at this time.</p>																												

Item	Comments
2	Condition 1. Limit and Target Reference Points
Activity assessed	<p>Although there are limit and target reference points, there are no reference points consistent with the more precautionary Harvest Control Rule catch trigger level (interpreted here as the Precautionary Upper Catch Level (PUCL)) of 620 000t.</p> <p>Action required: Estimate the precautionary fishing mortality and biomass levels consistent with the catch trigger level of 620 000t and (as this is a low trophic level species) assess the associated risk of over fishing according to the predator and recruitment criteria.</p> <p>Timescale: Within one year of certification.</p> <p>Relevant Scoring Indicators: 1.1.2</p>
Action Plan	<p>During the first year of certification Aker Biomarine Antarctic AS agrees to provide an estimate on the precautionary fishing mortality and biomass levels consistent with the catch trigger level of 620 000t and assess the associated risk of over fishing according to the predator and recruitment criteria. A working group consisting of independent scientists from the international community will be established to provide the updated data and modelling required for the estimate. This will include personnel from the Norwegian Institute of Marine Research as well as the British Antarctic Survey. Aker Biomarine will work closely within the framework and management requirements of CCAMLR and CEMP. Key stakeholders will be involved in the programme, including WWF Norway to validate the process, outputs and final reporting. Final reports will be independently peer reviewed.</p>
Observations	<p>The target and limit reference points have been defined as part of the harvest control rule. However, the fishery is currently managed on a catch trigger, which is acting as an effective risk-limit reference point. To show that this reference point is appropriate for the stock, the fishing mortality and SSB consistent with the catch trigger level were estimated for comparison with the harvest control rule (MRAG 2011).</p> <p>The upper limit on fishing mortality, which in the simulation has a 2.5% chance of being exceeded in the “worst scenario” (highest recruitment SD) was less than 0.05 year^{-1}, which is still well below the target fishing mortality resulting from the harvest control rule (approx. 0.186 year^{-1}) and much lower than the natural mortality (approx. 0.84 year^{-1}). The “worst scenario” lower limit of the SSB as a proportion of the unexploited SSB (10% chance of being below 62.8%) is well above the limit reference point (20%). Note that this level of variation in SSB would not be much different to the unexploited stock as most of the variation in the estimates comes from likely background variation in recruitment. All these results indicate that the catch limit is highly precautionary and appropriate to the stock and the species.</p> <p>The work, although led by MRAG, has involved consultations with IMR, WWF Norway.</p> <p>MRAG (2011) paper describing the process of determining reference points consistent with trigger level is included as Appendix I to this report.</p>
Conclusion	<p>The results show that catches at or below the trigger will be well below those that would achieve the target or limit point and therefore are low risk. This shows that the <i>de facto</i> reference points used in the current harvest strategy are appropriate to the stock and meet all SG80 requirements, meeting the condition.</p> <p>In scoring the SG100, on the second scoring issue the guidepost states “The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant precautionary issues.” This has been demonstrated in the Condition 1 response for the current fishery at catches below the trigger.</p> <p>This condition has been met within the required timeframe. PI 1.1.2 has been rescored.</p> <p>All of the SG80 requirements are now met. Of the two SG100 requirements, the first (<i>The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant precautionary issues</i>) is also met. The determination of reference points in relation to the 620 000 t trigger level shows</p>

	<p>consideration of relevant precautionary issues.</p> <p>The second SG100 requirement (<i>The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty</i>) is not considered to be met as the subdivision of allowable catches into SSMUs (which would then fully reflect the ecological role of the stock) has not been completed.</p> <p>PI 1.1.2 is therefore rescored at 90 and this condition Closed.</p>
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Item	Comments
3	Condition 2. Larval fish catch
Activity assessed	<p>Larval fish catch within all fisheries for Antarctic krill is expected, although the Aker BioMarine fishing method allows this amount to be measured (the suction technology maintains the integrity of the larvae). At the current level of catch, the rate of larval fish capture is not likely to place species beyond biologically based limits or hinder recovery and rebuilding of depleted species. However, this has not been demonstrated with appropriate scientific rigour.</p> <p>Action required: Assess the risk that the main retained species are beyond biologically based limits as a result of larval fish catch at current and trigger levels; concentrating on <i>C.gunnari</i> and <i>N.rossii</i> but with consideration for other species which may be of concern.</p> <p>If the risk is unacceptable a strategy should be tested and then implemented which would be expected to maintain the fish species at levels which are highly likely to be within biologically based limits or to ensure the krill fishery does not hinder their recovery and rebuilding.</p> <p>Timescale: The risk assessment must be completed within 2 years from certification. If required, the strategy must be implemented within 4 years from certification.</p> <p>Relevant Scoring Indicators: 2.1.1, 2.1.2</p>
Action Plan	<p>Within 2 years of certification Aker Biomarine will assess the associated risks that the main retained marine fish species are beyond biologically based limits, at current and trigger levels. The assessment programme will focus on <i>C.gunnari</i> and <i>N.rossii</i> whilst still monitoring all retained marine larvae. Independent scientific observers will be employed during all krill fishing operations to assess marine larvae by catch. Data will be made available to stakeholders. Standard sampling protocols will be employed (described in the CCAMLR Interim protocol for Fish/Fish Larvae by-catch observation in Krill fishery).</p> <p>Methods and results will be independently verified by experts in the field of Antarctic marine larvae from British Antarctic Survey and other relevant organisations. Potential influences on by-catch will be recorded for each trawl and included in the analyses. These include trawl type, CCAMLR Area (48.1,48.2 and 48.3), season ('Summer' from October to March and 'winter' from April to September), Time of Day (=Day' from 0600hrs to 1800hrs and 'Night' from 1800hrs to 0600hrs), sea state (recorded on a categorical scale from 1 to 8), sea-surface temperature (SST), bottom depth, fishing depth and the krill catch for that particular trawl. With the use of advanced statistical modelling, seasonal and geographic influences can be determined on the frequency and species of marine larvae by-catch. From this any key factors can be identified that increase the risk of marine larvae by catch. Aker Biomarine has been monitoring marine larvae by catch, as described above, for all its operations since 2006. This information can be made available to increase the data and reliability of the modelling.</p> <p>Once risk factors have been identified then management programmes can be established within 4 years to avoid vulnerable populations and reduce impact. As with condition 1, Aker Biomarine will work closely within the framework and management requirements of CCAMLR and CEMP. Key stakeholders will be involved in the programme, including WWF Norway to validate the process, outputs and final reporting. Final reports will be independently peer reviewed.</p>
Observations	Work is underway by MRAG on addressing this Condition. The work is divided into three

	<p>phases. The first phase deals with estimating the catches of larval fish and factors influencing this (location – subarea or SSMU, season, time of day etc). This is based on observer data from the Aker Biomarine vessel Saga Sea. Phase I is now nearing completion, due for July 2011. It is noted that many ‘hauls’ have no larval fish catch, particularly when krill density is high.</p> <p>Phase II is also underway, to provide an estimate of stock sizes using existing larval data and groundfish surveys from UK (BAS) and UK (US-AMLR). Projection models will then be constructed to allow estimation of the effects of different levels of by-catch. Finally, Phase III will then estimate the effects of different catch levels (including current catch levels and catches at the trigger level) using information from Phase I and II and a literature review of plausible larval mortality rates.</p> <p>Changes have been made to observer protocols for larval sampling, which now includes recording larger fish in a larger sample, and then sub-sampling for larval fish counts. The methodology has been tested and is expected to provide fuller data on fish by-catches.</p> <p>It is noted that various stakeholders are involved in the process, including IMR and WWF Norway.</p>
Conclusion	<p>Work is currently well underway to address this condition. The work is scoped to address the issues raised in the condition and is in line with the client action plan. Action to address this Condition is considered to be On-Target.</p>

Item	Comments
4	Condition 3. Ecosystem Effects
Activity assessed	<p>The PI requirements is that “There is a partial strategy in place, if necessary, that takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.”</p> <p>While it is noted that at the current level of catch, the impacts on predators are predicted to be negligible, recent simulation modelling has demonstrated that the current krill catch trigger level may not be precautionary in all situations.</p> <p>Action required: It is noted that the issue of sub-dividing the krill TAC is being considered within CCAMLR; and also that the likelihood of such a situation arising appears very low. The implementation of an appropriate mechanism within the term of this certification would therefore fulfil this condition (i.e. will prevent significant local depletion).</p> <p>Aker BioMarine should also support the development of appropriate strategies through the provision of any information required by CCAMLR to assist this process and an appropriate strategy should be developed and implemented. Should situations arise whereby significant localised depletion could occur, Aker should adapt its fishing patterns to reduce such localised depletion to the greatest extent possible.</p> <p>Timescale: Provision of information should be carried out in accordance with Voluntary Condition [4], and information provided to CCAMLR on request. An appropriate strategy to prevent significant localised depletion must be implemented within 4 years of certification.</p> <p>Relevant Scoring Indicators: 2.5.2</p>
Action Plan	<p>To support management strategy for CCAMLR, AKBM will collect data during fishing operation and submit data to CCAMLR. Data will be collected according to Conservation measure 51-04 (2009) (General measure for exploratory fisheries for <i>Euphausia superba</i> in the Conservation Area in the 2009/10 season, ANNEX 51-04A). This would provide data on local krill abundance in the areas/seasons where the fishery operates.</p> <p>A research plan will be made before 2011 season based on (ANNEX 51-04B), adapted to Aker BioMarine fishing operation and fishing gear.</p> <p>Aker BioMarine will support by data and operative knowledge development of appropriate strategy to avoid local depletion. This matter has been discussed with CCAMLR member states and agreement has been reached for AkerBioMarine to support developing a suitable strategy within the four year timescale</p> <p>Aker BioMarine will implement a new operation procedure to minimize localized depletion.</p>
Observations	<p>Firstly, as noted above, current catches fall well below the precautionary catch trigger level. The likelihood of any potential impacts on predators therefore remains very low.</p> <p>Notwithstanding this, CCAMLR have implemented CM 51-07, which sets an interim distribution of catches of krill between sub-areas in 48 as follows:</p> <p>48.1 25% 48.2 45% 48.3 45% 48.4 15%</p> <p>This measure has the particular aim of avoiding disproportionate effects on land-based predators until allocations by SSMU are in effect.</p> <p>Aker BioMarine has continued to maintain 100% observer coverage on its vessel and to provide data to CCAMLR as required. Aker BioMarine has also undertaken two initiatives to promote industry cooperation with CCAMLR:</p> <ol style="list-style-type: none"> 1. Aker BioMarine has begun its own studies into the relations between krill, fishing and predator populations, discussed further under Condition 4 below. 2. Aker BioMarine and Krillsea Group have led discussions within the krill fishing industry to promote sustainability in the fishing industry to ensure long-term viability

	<p>of stocks of krill and dependent predators. This is to be undertaken under an industry association.</p> <p>Aker BioMarine has also undertaken a 5-day research survey in sub-area 48.2. This was carried out to provide acoustic surveys in the area (tying-in with US AMLR and BAS surveys in 48.1 and 48.3). Samples of krill were also obtained for correlation. The work was undertaken by scientists from IMR as part of a Norwegian-Chinese programme looking at krill and predator distributions.</p>
Conclusion	<p>Significant steps have been taken within CCAMLR to begin the process of distributing catches to avoid effects on dependent predators.</p> <p>As outlined above and under Condition 4 below, significant steps have been taken by Aker BioMarine to provide information to CCAMLR from its own activities, and through a newly formed industry association.</p> <p>The situation has not apparently arisen whereby significant localised depletion could occur (catches remain significantly below the precautionary trigger level) and so no responses through adaptation of Aker BioMarine fishing patterns have been required.</p> <p>Progress with this condition is generally On target, and in terms of data provision, ahead of target.</p>

Item	Comments
5	Condition 4. Additional Voluntary Condition – SSMUs and Krill-Predator Interactions
Activity assessed	<p>SSMUs. If the fishery expands beyond current catch trigger levels (620 000 mt) then SSMUs, as defined by CCAMLR, must be introduced within two years of expansion beyond the trigger levels or (in the absence of other relevant and compelling information) the certification will be voluntarily withdrawn.</p> <p>Krill-Predator Interactions. Within 12 months of certification, the Aker BioMarine krill fishery will develop a comprehensive research programme to map their fishing operations in relation to information on predator distribution and abundance to help to address the key uncertainties associated with the relationship between krill biomass and predator populations.</p> <p>Relevant Scoring Indicator: N/A</p>
Action Plan	N/A
Observations	<p>As discussed above, catches from the fishery remain within catch trigger levels; the requirements of the first paragraph are therefore not invoked.</p> <p>Aker BioMarine has prepared an appropriate research plan, cooperatively with WWF (Concept note, predator impacts of Aker BioMarine's krill fishing operations). The stated aims of the project are <i>"to evaluate the potential impacts of Aker's krill fishing operations on krill dependent, land-based predators, and potentially propose recommendations for conflict avoidance measures. This work will be undertaken in collaboration with BAS, AAD and IMR, aiming for presentation of results by mid-2012. The project will collect and integrate available predator distribution data, and interpret the data in relation to an extensive mapping of Aker's krill fishing operations over the past 5 years"</i>. Elements of work include collation of available information on predator distributions, identification of remaining data gaps, overlay and mapping of predator distribution with Aker fishing activity. This will link into existing related research programmes.</p>
Conclusion	<p>The requirements of the first part of this Condition are not required at this time.</p> <p>The requirements of the second part of this condition have been met – a collaborative, costed research programme has been instigated within 12 months of certification.</p>

4	Any complaints against the certified operation; recorded, reviewed and actioned
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	<p>No complaints have been received within CCAMLR in relation to the Aker Biomarine fishery.</p> <p>Various articles have been published in the general press in relation to the fishery which have been noted (incl. articles in Nature and responses thereto).</p> <p>No direct factual complaints have been made in relation to the operation of the fishery, however.</p>
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5	Any relevant changes to legislation or regulation.
	<p>CCAMLR Conservation measures which have been introduced or modified, and which have a bearing on this fishery:</p> <p>CM 10-04 Mandatory use of VMS now includes all krill fishing vessels (this also addresses one of the recommendations of the MSC assessment team)</p> <p>CM 23-06 Data Reporting system for Euphausia superba fisheries. Reporting requirements now require reporting at five day intervals when total catches exceed 50% of the trigger level.</p> <p>CM 51-01 Precautionary catch level of Euphausia superb confirms trigger level at 620 000 t</p> <p>CM51-06 Observer coverage. This has now increased to a general requirement for 50% of all vessels to have observers, for 20% of hauls to be observed, and that all vessels be observed at least once in every two seasons. It is noted that all Norwegian vessels have 100% observer coverage.</p> <p>CM 51-07 Sets an interim distribution of catches of krill between sub-areas in 48 as follows:</p> <p>48.1 25%</p> <p>48.2 45%</p> <p>48.3 45%</p> <p>48.4 15%</p> <p>This measure has the particular aim of avoiding disproportionate effects on land-based predators until allocations by SSMU are in effect.</p>
	The above changes are all seen as positive and beneficial in relation to the management of this fishery, many correspond to the recommendations of the MSC assessment team.

6	Any relevant changes to management regime.
	<p>CCAMLR management is not changed significantly in relation to meeting the requirements of the MSC standard.</p> <p>Aker Biomarine internal management remains unchanged. The only significant change is that the Directorate of Fisheries has allowed companies to apply for additional licenses to fish for krill. Aker Biomarine has applied for an additional license for a second vessel. If awarded and taken up, this additional vessel would be included within the scope, and requirements of this MSC certification.</p>

7	Overall Conclusions
	<p>The rescoring of PI 1.1.2 as set out under Condition 1 results in a revised Principle 1 score of 88.8.</p> <p>No changes in management of the fishery have taken place that would detrimentally affect the performance of this fishery against the MSC standard and the fishery therefore continues to meet the requirements of the MSC Standard..</p> <p>MSC Certification should therefore continue with audits annually.</p>

Information Sources:**Meetings**

26 May 2011. MRAG. Tom Peatman, David Agnew, James Moir Clark

27 May 2011. Aker BioMarine/MRAG. Sigve Nordrum, Tom Peatman, David Agnew

Reports etc

MRAG. May 2011. Response to MSC Conditions on the krill fishery. Condition 1 limit and target reference points. Final Report.

Aker BioMarine. Draft concept note, Predator impacts of Aker BioMarine's krill fishing operations.

CCAMLR. Schedule of Conservation Measures in force 2010/11 season.

Krill Industry association. Minutes of meeting 21-23 Oct 2010 and Presentation to industry measures 2 Nov 2010.

Krafft, B et al. Antarctic krill and apex predators in the South Orkney Islands area 2011, surveyed with the commercial fishing vessel Saga Sea. IMR, May 2011

Standards and Guidelines used:

1. MSC Principles and Criteria for Sustainable Fishing
2. MSC Fishery Certification Methodology Version 6. September 2006
3. TAB Directives - all



MSC Interview Record

IMM Attendees

Lead Auditor/Coordinator: A Hough

Team Members: P Medley

Stakeholders:

Affiliation

1. MRAG

Representatives

Tom Peatman, David Agnew, James Moir Clark

Location: MRAG London

Date: 26 May 2011

1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including

- Fishery Unit of Certification (and client)
- Assessment Team
- Intertek Moody Marine as independent CB accredited to carry out MSC assessments
- Purpose of meeting – information collection and identification of issues relevant to fishery assessment
- MSC Principles & Criteria and Assessment Process being followed; FAM Assessment Tree
- RBF (if applicable)
- That stakeholder comments may be non-attributable if required

Comments:

None



2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO etc)

Scientific advice to fishery management (CCAMLR) and MSC fishery client (Aker Biomarine)

3. IMM Questions

Assessment team questions for stakeholder response

General questions were posed on the status of the fishery, actions in relation to Conditions 1 and 2 and general changes in the science, management and regulation of the fishery.

4. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3)

What information is available to allow us to determine the status of the fishery in relation to each issue?

Information was provided in relation to questions raised by the assessment team. This information is contained in the surveillance report.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

None.



6. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- Are comments to be attributed?
- Timescale for completion, including further opportunities for stakeholder input

Confirmed

IMM Lead Auditor

Stakeholders



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Lead Auditor/Coordinator: A Hough

Team Members: P Medley

Stakeholders:

Affiliation

1. Aker Biomarine
2. MRAG

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Client and scientific advisors to CCAMLR and client

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