

Approved Arrangement For:

**MATILDA BAY - Reg. Est. No. 1377
MARY JANE STELLA – Reg. Est. No. 1602**

Version 8

PART 3 - HACCP

Current Date of Issue 04/02/13

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Part 3 The HACCP Plan

References: Schedule 2, Clauses 2.1(a), 3.1 – 3.9 of the *Export Control (Fish and Fish Products) Orders 2005*

This HACCP Plan has been prepared in accordance with the requirements of the *Export Control (Fish & Fish Products) Orders 2005*, the principles of Hazard Analysis and Critical Control Point system adopted by the Codex Alimentarius Commission and where applicable, the requirements of the FSANZ Food Standards Code and is supported by a program of Good Manufacturing Practices and Standard Operating Procedures.

Hazards controlled by meeting the operational hygiene requirements of the Orders have not been identified as part of the HACCP Plan.

Control of operational hygiene is described in Part 2 – Good Manufacturing Practices and includes controls for ensuring that inputs to the process including packaging, plastic bags, Sulphur dioxide (SO₂) and water are verified as being safe and received from reliable sources.

3.1 The HACCP Team

The following HACCP Plan has been developed by:

Name	Position	Qualifications
On File	Skipper	Industry Experience Other qualifications kept on file
On File	Deck Supervisor	Industry Experience Other qualifications kept on file
On File	The Company Representative	Industry Experience Other qualifications kept on file

3.2 Hazards Identified

References: Schedule 2, Clause 3.2 of the *Export Control (Fish and Fish Products) Orders 2005*

Hazards identified in the following Hazard Analysis Table as potential hazards that **may be reasonably expected to occur** include:

Physical Hazards associated with the source of the product and the process and include:

- Foreign matter
- Grit or Coral

Chemical Hazards identified include:

- SO₂ residue from additive treatment in excess of regulatory levels
- Oil, grease
- Pollution
- Biotoxins in Saucer scallops WITH ROE **ON** ONLY

Microbiological Hazards identified include:

- Microbiological growth due to poor temperature control

Regulatory Hazards identified include:

- Cadmium in excess of EU requirements (prawns only)
- Incorrect net weight
- Incorrect Trade Description

Quality Hazards identified may include:

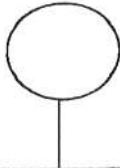
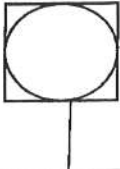
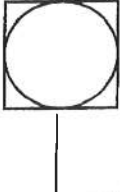
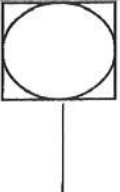
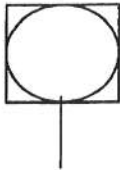

- Incorrect Grade, due to mixture of sizing
- Quality of product

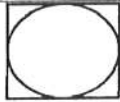
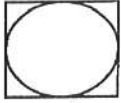
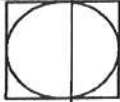
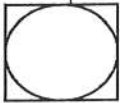
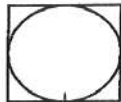
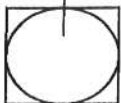
3.3 Product Description

Whole Frozen Raw Crustaceans – Prawns and Crabs Whole Frozen Raw Cephalopods – Squid and Cuttlefish Frozen Raw Saucer Scallop meat – roe-off		
Raw Material	Tiger prawns (<i>Penaeus esculentus</i> , <i>P. semisulcatus</i>) Black tiger prawns (<i>Penaeus monodon</i>) Endeavour prawns (<i>Metapenaeus endeavouri</i> , <i>M. ensis</i>) King prawns (<i>Melicertus latisulcatus</i> , <i>M. plebjus</i>) Coral or Velvet prawns Squid Cuttlefish Blue Swimmer Crabs Saucer Scallop (<i>Amusium balloti</i>)	
Source of Raw Material	Shark Bay – “WILD ORIGIN ALL PRODUCT”	
Ingredients	Metabisulphite or Melacide SC40 - prawns only	
Preservation Method	Freezing to below -18°C.	
Intended use	Export – Customer to determine intended use.	
Packaging	Printed Outer carton with Plastic bag Printed Inner cartons with Plastic bag.	
Refrigerated Transport	Keep frozen at or below –18°C.	
Storage	Keep frozen at or below –18°C.	
Finished product requirements Australia * See - Part 1 Management Practices & Procedures - Product Testing Schedule section 1.7.2	Standard Plate Count	Less than 500,000 org per gram
	Coagulase-positive staphylococci	Less than 100 org per gram
	Salmonella	Nil org / gram
	Sulphur dioxide (SO ₂) Prawns only	Less than 100ppm (mg/kg)
Importing country requirements (EU) Prawns only	Cadmium	Less than 0.5 mg/kg
Product label	See Trade Description – Part 1 See SOP – Carton Marking – Part 4	

3.4 Process Flow Chart

- for Frozen Raw Crustaceans / Mollusc / Cephalopods

STEP NUMBER	PROCESS SYMBOL		STEP / DESCRIPTION OF PROCESS
1.			<p>1. Trawling The cod ends are secured and the nets are then shot away. The trawling time can vary from shot to shot.</p>
2.			<p>2. Landing the Catch The nets are winched up, the Cod ends are released and the product is spilt onto the sorting table.</p>
3.			<p>3. Sorting the Catch The majority of the prawns are placed in the flume and conveyed to a grading machine. All other products are placed in baskets.</p>
4.			<p>4. Grading Depending on volume prawns are either hand graded or sorted through the grading machine. Small quantity of prawns and all other products are hand graded.</p>
5.			<p>5. Dipping – prawns only Prawns are the only crustaceans dipped in a solution of Sulphur dioxide solution of 80-100ppm for no more than 5 minutes. Removed from the solution and left to drain for no less than 1 minute.</p>
6.			<p>6. Shucking - Saucer scallop are the only molluscs, which are removed from their shell. The shell is opened with a sharp knife and the roe and gut is removed by slicing with the sharp knife ensuring all roe is removed. The meat is removed by slicing the meat away from the shell removing the scallop meat in one movement and leaving little or no scallop meat on the shell.</p>

7.				<p>7. Washing – Crustacean, Mollusc & Cephalopods All cephalopods are taken whole and are to be of size. Seawater is used in the washing of product. Prawns are washed when conveyed through flumes. All other products are washed manually prior to weighing and packing.</p>
8.				<p>8. Weighing / Packing / Carton Marking Prior to processing the scales are calibrated. A plastic bag liner is placed in a metal scoop, which is attached to the scales. The product is tipped into the plastic bag liner until the correct weight is achieved. The product is then removed from the scales and then placed in the correctly marked carton. (Product is checked throughout the process)</p>
9.				<p>9. Freezing The finished cartons are lowered into snap and stored until -18°C or colder.</p>
10.				<p>10. Storage The product is removed from snap once the required temperature is reached -18°C or colder. The product is then transferred to holding room and stored at -18°C or colder until unload.</p>
11				<p>11. Unload Product temperature is taken and the product is removed from holding room and conveyed onto refrigerated transport.</p>
12.				<p>12. Transport A reputable transport company supplies refrigerated transport. It is the responsibility of the Skipper or Mate or Deck Supervisor to ensure the container storing the product is clean and refrigeration is working.</p>

Flow diagram verified by: M. Guleron

Date: 20/8/2013

3.5 Hazard Analysis

- for the processing of Frozen Raw Crustaceans / Mollusc / Cephalopods

Step	Potential hazard	Causes	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
1. Trawling	Physical contamination	Mud, grit, foreign matter	No	Can be removed during sorting or washed	Trawl time / area are modified Product is visually inspected on landing Follow <u>SOP – Processing</u>	QCP	Product Assessment Review of monitoring records Form V002
	Chemical contamination	Cadmium	No	High levels of cadmium may make prawn ineligible for export to EU.	Product is traceable to catch area. Quantity caught in the area is to be accurately identified and re-directed to another market if required	RCP	Product Testing “Mock Recall” to ensure product traceability
		Pollution (oil or chemical spills or runoff) Biotoxins in Saucer scallops roe off	Yes No	Chemical residue could be harmful to human health – obviously contaminated catches are rejected. Roe & gut removed from Saucer scallop meat. Product is traceable to catch area. Quantity caught in the area can be accurately identified if recall, segregation or testing is required	Product is inspected on landing (appearance, smell, feel) – obviously contaminated or suspect catches are rejected Radio is monitored for reports from fisheries, port authorities Standard Operating procedures for shucking Saucer scallops	CCP CP	Product Assessment Product Testing if required

Step	Potential hazard	Cause/s	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
	Biological contamination	Diseased product, products with parasites, unwholesome material	Yes	Diseased product and unwholesome material can be removed during sorting. Prawn parasites are not harmful if consumed	Crew are trained to identify unacceptable product and visually inspect – reject diseased, unwholesome product Follow <u>SOP – Processing</u>	CCP	Product Assessment Review of monitoring records Form V002
2. Landing the catch	Physical contamination	Grit, Mud, Foreign matter in catch	No	Can be removed during sorting or washed	Follow <u>SOP – Processing</u> - visually inspect product during sorting, separate and wash any muddy or gritty product. <u>SOP - Washing</u>	CP	Product Assessment Review of Monitoring records Form V002 Internal Audit
	Chemical contamination	Catch contaminated by Pollution (oil or chemical spills or runoff) Hazardous substances in catch – leaking oil drums, paint etc	Yes Yes	Chemical residue could be harmful to human health – obviously contaminated catches are rejected. Contaminated product be removed prior to sorting / rejected	Visually inspect product in trays Product is inspected (appearance, smell, feel) – obviously contaminated or suspect catches are rejected Follow <u>SOP – Processing</u> Product is inspected (appearance, smell, feel) – obviously contaminated or suspect portion of catch is rejected	CCP CCP	Product Assessment Review of Monitoring records Form V002 Internal Audit

Step	Potential hazard	Cause/s	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
	Biological growth	Microbiological growth – prawns not protected from sun, insufficient temperature control	No	Can be controlled by SOP	Follow SOP for <u>Processing</u> including requirement to cool trays, shade product, and process quickly.	CP	Product Assessment Review of Monitoring records Form V002 Internal Audit Product Testing
3.	Physical contamination	Foreign matter in catch	No	Can be removed during sorting	Follow SOP – <u>Processing</u>	CP	Product Assessment Review of Monitoring records Form V002 Internal Audit
	Chemical contamination	Contaminated product in catch	Yes	Can be removed during sorting / rejected	Train crew Visually inspect / smell product – reject all contaminated product <u>Follow SOP – Processing</u>	CP	Product Assessment Review of Monitoring records Form V002 Internal Audit
	Biological growth	Microbiological growth caused by insufficient temperature control	No	Can be controlled by SOP	<u>Follow SOP – Processing</u>	CP	Product Assessment Internal Audit Product Testing Form V004
4.	Physical contamination	Foreign matter not removed during sorting	No	Can be removed during grading	<u>Follow SOP – Grading</u>	CP	Product Assessment Review of Monitoring records Form V002 Internal Audit

Step	Potential hazard	Cause/s	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
	Chemical contamination	Contaminated product in catch	No	Can be removed during grading / washed / rejected	Visually inspect / smell product. Reject contaminated product <u>Follow SOP – Grading</u>	CP	Product Assessment Internal Audit
	Biological growth	Microbiological growth caused by insufficient temperature control	No	Product is graded as quickly as possible	<u>Follow SOP – Grading</u> Visually inspect quality of product.	CP	Review of Monitoring records Form V004 Internal Audit Product Testing
	Incorrect grade / quality	Untrained crew	No	Quality hazard	<u>Follow SOP – Grading</u> <u>Follow SOP – Product Assessment</u>	QCP	Product Assessment Review of Monitoring records Form V002 Internal Audit
5. Dipping (Prawns only)	Physical contamination	Foreign matter	No	Prawns dipped in SO ₂ solution – foreign matter will remain in dip tank	<u>Follow SOP – Dipping</u>	CP	Product Assessment
	Chemical contamination	Incorrect usage of Sulphur dioxide (SO ₂)	No	Regulatory level of less than 100ppm SO ₂ Presence of sulphites pre-marked on cartons	<u>Follow SOP – Dipping</u> Control strength of dip solution and dip time Verification of Trade Description	RCP	Product Testing Internal Audit Review of monitoring records Form V002
	Biological growth	Microbiological growth caused by insufficient temperature control	No	Minimal dip time Can be controlled by SOP	<u>Follow SOP – Dipping</u>	CP	Product Testing Internal Audit
6. Shucking (Saucer Scallops only)	Physical contamination	Shell grit remaining in product	No	Product will be washed and drained following shucking	<u>Follow SOP – Shucking</u>	QCP	Product Assessment

Step	Potential hazard	Cause/s	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
	Chemical contamination (Biotoxins)	Gut and roe not fully removed from Saucer scallop meat	No	Product is intended as a roe-off product, washed and inspected prior to packing	Visual inspection Follow <u>SOP – Shucking</u>	CP	Product Assessment
	Biological growth	Microbiological growth caused by insufficient temperature control	No	Minimal shucking time Can be controlled by SOP	<u>Follow SOP – Shucking</u>	CP	Product Testing Internal Audit Review of monitoring records Form V004
7. Washing	Physical contamination	Foreign matter	No	Washing will remove all foreign matter and grit	Visual inspection during processing – Follow <u>SOP – Washing</u>	QCP	Product Assessment Review of Monitoring records Form V002 Internal Audit
	Chemical contamination	None identified	No	Contaminated product is removed prior to wash.	Visual inspection during processing – Follow <u>SOP – Washing</u>	QCP	Product Testing Internal Audit Review of Monitoring records Form V004
	Biological growth	Microbiological growth caused by insufficient temperature control	No	Minimal washing time Can be controlled by SOP	<u>Follow SOP – Washing</u>	CP	Product Testing Internal Audit Review of monitoring records Form V004
8. Weighing / Packing	Physical & chemical contamination	None identified	No	Only clean, food grade packaging used	<u>Follow SOP – Weighing / Packing</u>	CP	Product Assessment Review of Monitoring records Form V002 Internal Audit
Carton Marking	Biological growth	Microbiological growth caused by insufficient temperature control	No	Minimal packing time – product to be removed to the freezer Can be controlled by SOP	<u>Follow SOP – Weighing / Packing</u>	CP	Product Testing Internal Audit Review of monitoring records Form V004

Step	Potential hazard	Cause/s	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
	Incorrect weight	Untrained crew Incorrectly calibrated scales	No	Regulatory requirement	Follow <u>SOP – Weighing/ Packing</u> Follow <u>Calibration Procedures</u>	RCP	Product Assessment Review of Monitoring records Form V002
	Incorrect trade description	Cartons incorrectly marked	No	Regulatory requirement	Follow <u>SOP – Carton Marking</u>	RCP	Product Assessment Review of Monitoring records Form V002
9.	Physical & chemical contamination	None identified	No	Product in cartons	Follow <u>SOP – Snap Freezing and Freezer Hold</u>	CP	Review of Monitoring records Form V001
	Biological growth	Microbiological growth caused by insufficient rapidity of freezing or failure of freezing process	Yes	Pathogen growth may occur if product is not frozen quickly or freezing process fails	Product to be reduced to below -18°C within 18 hours, freezing times & temperatures monitored Follow <u>procedures for Temperature Control</u>	CCP	Product Testing Internal Audit Review of monitoring records Form V004
10.	Physical & chemical contamination	None identified	No	Product in cartons	Follow <u>SOP – Snap Freezing and Freezer Hold</u>	CP	Review of Monitoring records Form V001
	Biological growth	Microbiological growth caused by insufficient temperature control	Yes	Pathogen growth may occur if product is not maintained at less than 5°C, or if freezing process fails	Ensure product is held at below -18°C Follow <u>Procedures for Temperature Control</u>	CCP	Product Testing Internal Audit Review of monitoring records Form V004
11.	Physical contamination	None identified	No	Product in cartons	Follow <u>SOP- Unloading</u>	CP	Management Review of customer complaints Review of suppliers
	Chemical contamination	Chemical contamination from fuelling operations	No	No fuelling while unloading time can be controlled by SOP	Follow <u>SOP- Unloading</u>	CP	Management Review of customer complaints Review of suppliers

Step	Potential hazard	Cause/s	Significant hazard for food Safety?	Justification for inclusion/exclusion as a significant hazard	Control measures	CP / CCP RCP or QCP?	Verification Procedures
	Biological growth	Microbiological growth caused by insufficient temperature control	No	Product frozen & not unloaded unless below -18°C Minimize unloading time Can be controlled by SOP	<u>Follow SOP – Unloading</u>	CP	Product Testing Review of monitoring records Form V004
12. Transport	Physical contamination Chemical contamination Biological contamination & growth	Unclean, inappropriate transport vehicle Unclean, inappropriate transport vehicle Microbiological growth caused by insufficient temperature control	No No No	Visual inspection of vehicle before loading. Can be controlled by SOP Inspection of vehicle condition and temperature before loading. Can be controlled by SOP	Inspect vehicle, use only Approved Transport Follow SOP- Unloading Ensure that vehicle is clean, appropriate and refrigerated -18°C or below. Follow <u>SOP – Unloading</u>	CP CP CP	Management Review of customer complaints Review of suppliers Management Review of customer complaints Review of suppliers

3.6 Hazard Analysis Critical Control Point (HACCP) Table
 - for Raw Frozen Mollusc/Cephalopods/ Crustaceans

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action If Critical Limits are not met or are exceeded the following action will be taken:
2. Landing the catch	Polluted or toxic fishing area. (Natural toxins and chemical contamination)	Product inspection on landing (CP)	Who: Mate or Deck Supervisor What: Visually inspects catch When: On each landing Where recorded: Log Book	All products suspected of being polluted or with an abnormal smell, feel or appearance is to be rejected as waste and contamination reported to the Skipper	Person responsible: Mate/Deck Supervisor/Skipper Trawl area is to be identified by the Skipper as an area unacceptable to trawling and noted in the Log book. Skipper to contact local fisheries department for any available information. Trawl area to be identified as an unacceptable area for trawling until further information received from authorities. Catch to be rejected and deck to be cleaned as per Cleaning Procedure. Recorded: Corrective Action Report.
5. Dipping (Prawns only)	Product dipped for excessive time or in solution exceeding critical limits	Preparation of solution & dip time (RCP)	Who: Mate or Deck Supervisor What: Ensure the sulphur dioxide level of the solution in each tank is 80-100ppm and product is dipped for no more than 5 minutes When: During processing Where recorded: Form V001	Sulphur dioxide solution 80-100ppm using the Analytical test strips. Product to be dipped for no more than 5 minutes	Person responsible: Mate/Deck Supervisor or Skipper notified. Solution dumped. Identify affected product as per Control of Non-conforming product and retrain operator.

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action If Critical Limits are not met or action will be taken:
8. Weighing / Packing / Carton Marking	Weight incorrect Cartons incorrectly marked	Weighing as per SOP Carton Marking as per SOP (RCP)	Who: Mate or Deck Supervisor What: Visually inspects cartons to ensure marked as per SOP When: Each batch. Where recorded: Product Handling Report Form V002	Carton weight as per SOP Cartons must be marked as per SOP	Person responsible: Mate or Deck Supervisor. Identify all products that maybe incorrectly marked or under weight and segregate as per Control of Non-conforming Product – re-mark cartons correctly. Re-train operator in SOP – Carton Marking Skipper to review staff training procedure. Investigate cause of non-conformance and record as per Corrective Action Procedure.
9. Freezing	Microbiological growth caused by insufficient rapidity of freezing – lack of temperature control	Product Temperature / time taken to reduce to less than -18°C. Temperature of snap freezer (CCP)	Who: Mate or Deck Supervisor What: Checks snap temperatures and product temperature with temperature probe When: Prior to loading snap and within a 16 hour period from placing product in snap freezer & on removal from snap Where recorded: Record time and temperatures on Form V001.	Ensure product is reduced to -18°C within 18 hours to minimise the growth of pathogens. Snap freezer to be -35°C or better on loading & maintained at -35°C or better.	Person responsible: Mate or Deck Supervisor. If product temperature warmer than -18°C. The Skipper to check refrigeration. If problem with refrigeration, this is to be corrected to ensure the required product temperature is maintain. If problem cannot be fixed. Follow Corrective Action Procedure. Record in Log Book and Form V001.

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action If Critical Limits are not met or action will be taken:
10. Frozen Storage	Microbiological growth caused by lack of temperature control	Product Temperature / freeze time (CCP)	<p>Who: Mate or Deck Supervisor What: Checks freezer hold temperature When: Daily Where recorded: Form V001.</p>	Hold temperature to be less than -32°C.	<p>Person responsible: Mate</p> <p>If hold temperature is warmer than -32°C. The Skipper to check refrigeration and product temperatures.</p> <p>If problem with refrigeration, this is to be corrected to ensure the required product temperature is maintain.</p> <p>If problem cannot be fixed. Follow Corrective Action Procedure.</p> <p>Record in Log Book and Form V001.</p>

3.7 Validation Table

CCP	Critical Limit	Validation / Justification of Critical Limits
Freezing	Product to be reduced to less than -18°C.	Reducing product to below -18°C will minimize the growth of pathogens of concern. Export Control (Fish & Fish Products) Orders 2005 – Schedule 5, Clause 21.1 FSANZ Food Standards Code – Standard 3.2.2
Freezing rate	Product to be reduced to -18°C or colder within a 18 hour period.	Reducing product to below -18°C as soon as is practicable of landing will minimize the growth of pathogens of concern. Product test results demonstrate that this rate of freezing is effective
Treating prawns with Sulphur dioxide (SO ₂)	Dip prawns according to SOP - Dipping to ensure prawn flesh does not contain greater than 100ppm SO ₂	All raw samples are to comply with The FSANZ Food Standards Code - Part 1.3 Standard 1.3.1 Section 9.1 of Schedule - maximum level permitted in raw prawn flesh is 100ppm Product test results will demonstrate that procedure is effective