

Meat Standards Australia™

MSA Standards Manual for Beef Grading



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Foreword

This section contains the Meat Standards Australia (MSA) Standards manual for Beef Grading for use within MSA licensed Enterprises approved to use registered Graders operating within an approved quality management system.

These Standards are designed to protect:

- (a) the integrity of the MSA program; and
- (b) the reputation of MSA.

Where companies are utilising MSA Trade Marks, these Standards should be read in conjunction with the “MSA Standards Manual for beef processing Enterprises”.

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1 Beef Grading

The Enterprise must only permit Graders to grade MSA product in accordance with this Standard and must ensure that each Grader meets the criteria set out below.

1.1 Registration of graders

Graders must apply to an Authorised Authority to be registered to grade carcasses to MSA requirements.

1.2 Maintenance of beef grading skills

All personnel grading carcasses must demonstrate competence to the satisfaction of an Authorised Authority through a correlation regime determined by the Authorised Authority.

If an Authorised Authority considers that an MSA coordinator ceases to demonstrate the levels of competency required for the position it may suspend the person's approval to act as an MSA coordinator.

1.3 Mandatory feedback requirements

The Enterprise must provide feedback to the vendor of livestock intended for MSA grading in a form and manner acceptable to an Authorised Authority. Without limiting the feedback provided, the vendor must be provided with details regarding livestock grading as determined by an Authorised Authority and the grading criteria.

The feedback sheet must contain the following carcass measurements:

- a) DNA number (If Applicable)
- b) Body number
- c) Sex
- d) Hang method
- e) Tropical breed content (If Applicable)
- f) Hump height
- g) HSCW
- h) Ossification
- i) MSA marbling
- j) AUS-MEAT marbling
- k) AUS-MEAT meat colour
- l) Subcutaneous rib fat or p8 fat
- m) pHu
- n) Milk fed vealer (by lot identification)
- o) Livestock exchange (by lot identification) Saleyard Pathway
- p) HGP (by lot identification)
- q) Boning group
- r) Grade codes
- s) MSA producer registration number
- t) Grader number
- u) Grade date
- v) Enterprise licence number
- w) Kill date

1.4 Approval to grade carcasses

- 1.4.1 Applicants must hold a “Statement of Attainment MSA Grading”, or equivalent, and must demonstrate to an Authorised Authority, satisfactory competence in grading through an initial correlation prior to registration.
- 1.4.2 Upon receiving a “Statement of Attainment MSA Grading”, or equivalent, an applicant must, within four weeks logon to the “OSCAP” program and must demonstrate to an Authorised Authority competence in an on-line correlation prior to the commencement of MSA grading.
- 1.4.3 A copy of each Grader’s “Statement of Attainment MSA Grading”, or equivalent, must be included in the Enterprise’s Quality Management System records.
- 1.4.4 The MSA Coordinator on site is issued with a password that can oversee staff details on “OSCAP”. This person will be required to login to “OSCAP” during audits to demonstrate the currency of their staff.

1.5 Maintenance of Grader status

- 1.5.1 To retain current status, a Grader must be a current AUS-MEAT chiller assessor and demonstrate competence to the satisfaction of an Authorised Authority through successful correlation via “OSCAP” and any other requirements of an Authorised Authority. A frequency of once in every eight (8) week period will be maintained.
- 1.5.2 Records of all correlations must be kept for each Grader’s performance and feedback will be provided via email within five working days. If a correlation is successfully passed, the Grader will be issued with electronic evidence of currency via email.
- 1.5.3 An Authorised Authority will maintain correlation records for 12 months.
- 1.5.4 Graders who lose currency status for any reason will receive electronic evidence via email of a loss of currency.
- 1.5.5 To regain currency within 6 months of being non-current, a Grader must complete to the satisfaction of an Authorised Authority a correlation of 40 images on “OSCAP” and comply with all other requirements.
- 1.5.6 To regain current status after being non-current for a period of or in excess of 6 months, a Grader must undertake a practical refresher day during which the Grader must complete to the satisfaction of an Authorised Authority a chiller correlation on 2 runs of 20 carcasses. In addition, the Grader must demonstrate to the satisfaction of an Authorised Authority competence in the requirements of the MSA program through a written examination and comply with any other requirements of the Authorised Authority.
- 1.5.7 A Grader must show competence in the following factors and in accordance with the following performance standards during correlation.

2 Attribute Correlation

Where an enterprise is hot grading, the Authorised Authority may place time constraints on the initial correlation process.

2.1 Ossification (OSS)

The variation between the assessment standard and the person correlating must not vary by more than 30% of the sample. No assessment may vary by more than a single score step. A score step is defined as a difference in the MSA ossification scores as shown in the [Ossification Standard Table](#).

2.2 MSA Marbling (MSAMB)

The variation between the standard and the person correlating must not vary by more than 30% of the sample. On a correlation run of 20 images, the variation must not vary by more than:

- 14 bodies scored within 50 of the assessor; and
- the remaining 6 bodies must not vary by more than 100 points; &
- no bodies can vary by 110 points or more.

And where necessary:

2.3 Tropical breed content of live animals (TBC)

The assessment made by the person assuming the position of the standard will facilitate training in relation to identification of Tropical Breed Content as determined by the Authorised Authority.

2.4 Hump Height

The assessment made by the person assuming the position of the standard and the person being correlated must not vary on the correlation run by more than 1 score step. A score step is defined as a difference of 10mm in the Hump Height from the correlator's score.

2.5 Fat distribution

The assessment made by the person correlating must not vary from the standard.

2.6 Loss of current status as a Grader

A Grader may have their Grader status withdrawn in the following circumstances:

- a) voluntarily upon receipt by an Authorised Authority of written notification from the Grader;
- b) for failing to comply with MSA Grader requirements;
- c) for failure to comply with an Enterprise's Quality Management System procedures;
- d) in any other circumstances determined by an Authorised Authority which in its opinion may adversely affect the integrity of the MSA program; or
- e) For failing to comply with the AUS-MEAT Chiller Assessment Standard.

2.7 Beef grading data validation

An Enterprise using the Trade Marks must supply throughput and grading data in accordance with this paragraph.

- 2.7.1 The Enterprise must, as required by an Authorised Authority, provide the full grading data set for each beef carcass or animal put forward for grading via e-mail, within the next working day.
- 2.7.2 An Authorised Authority will, following receipt of this data set, validate the data set and provide the results of the validation and statistical variance to the Enterprise.

3 Provision of resources

3.1 Instruments and facilities

The Enterprise must ensure that:

- a) all measuring and weighing instruments are adequate to perform the measurements required, are in good working order and are accurate; and
- b) adequate facilities are available to enable all measurements to be accurately taken and recorded.

3.2 MSA stamps and inserts

- a) The Enterprise must only apply carcase stamps and inserts for the purpose of MSA grading approved by an Authorised Authority unless, with respect of carcase stamps, the Enterprise receives a written exemption from the Authorised Authority.
- b) Carcase stamps and inserts issued by an Authorised Authority may only be applied at the Enterprise to which the stamps or inserts were issued.
- c) An Authorised Authority may withdraw from the Enterprise, for the period determined by the Authorised Authority, carcase stamps or inserts issued by the Authorised Authority. Without limiting the circumstances in which this action may be taken, it may be taken where the Authorised Authority considers that the integrity of the MSA stamps or inserts are at risk or any of those stamps or inserts have been incorrectly applied to carcasses or cuts.
- d) Carcase stamps and inserts issued remain the property of the Authorised Authority. Inserts can be purchased through the Authorised Authority. In some circumstances, an Enterprise can apply to the Authorised Authority for approval to use their own inserts. An example is an Enterprise with a MSA licensed brand.

3.3 Reference material

The Enterprise must at all times make the following documents available for reference by all relevant staff:

- a) these Standards, appendix and all amendments to them;
- b) all notifications that an Authorised Authority advises must be retained by Enterprises;
- c) all product specifications;
- d) the Enterprise's Quality Management System Manual and records; and
- e) all other documentation, which an Authorised Authority advises, must be made available for reference.

3.4 Payment of fees

The Enterprise must, on request from an Authorised Authority, pay the Authorised Authority such fees as the Authorised Authority from time to time determines are payable by the Enterprise in connection with these Standards or participation in the MSA program.

3.5 Mandatory Trade Mark labelling requirements

All use or intended use of the MSA Trade Mark and standards in relation to the identification of Certified MSA Product must be in accordance with the MSA Standards Manual references to Trade Mark Usage.

MSA Minimum requirements

The following Standards shall be adhered to where an Enterprise is applying for Accreditation of Level 1 only.

Processing responsibilities:

Direct consignment

- Vendor declaration checked against lot to ensure accuracy of information;
- Slaughter no later than the day after dispatch;
- Water available on arrival at the abattoir;
- Groups of cattle not to be mixed in lairage;
- No drafting of cattle on plant;
- Lot or animal identification to be maintained at all times through the production process;
- Cattle not left on slaughter floor chain for breaks longer than 20 minutes unless evidence can be shown that there is no adverse effect on the rate of pH and temperature decline; and
- Slaughter process to maintain a temperature and pH relationship within the required 'window'. (See overleaf: pH temperature window conformance)

Saleyard consignment

- Cattle shall be slaughtered within 36 hours after dispatch from the farm or property;
- A 5 CMQ4 point deduction will be made for livestock exchange or sale/yard consignment groups within the grading model;
- Milk calves consigned through livestock exchange or sale/yard facilities are ineligible for MSA grading.

Grading Standards

- Only Graders that are current as defined by AUS-MEAT Chiller Assessment criteria and MSA Grader criteria are permitted to assign MSA grades.
- All AUS-MEAT chiller assessment pre-conditions are to be adhered to;
- Ultimate pH less than or equal to 5.70;
- Meat colour scores of 1b-3;
- Minimum subcutaneous rib fat depth of 3mm, and p8 fat depth of 5mm;
- Even fat distribution over all major primals;
- Hide puller damage for areas greater than 10cm x 10cm on a single primal are excluded;
- MSA inserts to be placed in bags or approved identification on vacuum bags;
- Clear segregation maintained at boning room changeovers;
- MSA carton product intended to be sold as MSA graded must display the approved carton end labels or approved additions in existing labels; and
- MSA product must be clearly identified on invoices and paperwork.

Controlled pH Decline System monitoring (pH temperature window conformance)

Please refer to AUS-MEAT National Accreditation Standards; Appendix IV; Controlled pH Decline System (pH temperature window conformance) monitoring.

Approval must be granted by AUS-MEAT and Meat Standards Australia for the pH Decline Systems of all Licensed Enterprises. Enterprises must have their approval submitted within two months of completing Module 4B 'pH Measurement and Decline (Beef)'.

For a copy of the procedure please contact AUS-MEAT on 07 33619200, or www.ausmeat.com.au/standards/stdsec/nas/CPHDPROCEDURE181104.pdf

Monthly decline and weekly monitoring data can be emailed to:

ph_declines@mla.com.au

Carcase measurements

DNA number (DNA)

Each DNA sample has an individual code that is not repeated. This number is collected from the sample collector and referenced to the assigned body number.

Milk-Fed Vealer (MFV)

Milk-fed vealer is defined as a calf that is still suckling and sent direct to slaughter. (Can be identified as a lot rather than individuals).

Livestock exchange or saleyard (SY)

Identified animals that have been sold through an MSA accredited saleyard program. (Can be identified as a lot rather than individuals).

Body number

Each carcass shall be identified with a number, which can be used as identification of an individual body.

HSCW

Hot Standard Carcass Weight (HSCW) - Refer to AUS-MEAT; National Accreditation Standards; Appendix IV.

Sex

Each sex of the carcass shall be recorded as (M) male or (F) female. Refer to AUS-MEAT; National Accreditation Standards; Appendix IV.

Hang method (AT/ TL/ TX)

There are three current approved methods of hanging carcasses:

- AT: Conventional hanging by the Achilles tendon,
- TL: Hanging by the iliosacral ligament, which is more commonly known as the sacro-sciatic ligament,
- TX: Hanging by the "Pope's Eye" or "Aitch bone".

Tropical breed content (TBC)

Tropical Breed Content shall be recorded, according to the training and publication “MSA guidelines for assessing Tropical Breed Content (TBC) in Australian beef cattle” (ISBN: 1 74036 368)

Hump height

Animals of the same breed type can show different levels of visual (or phenotypic) Tropical Breed Content traits such as hump height, extended pizzle and ear length. This has been the basis behind the investigation of hump height (adjusted for HSCW) as a measure of visual Tropical Breed Content traits.

Method of hump height measurement

1. The ruler is held horizontally and parallel with the surface of the sawn chine.
2. The ruler is moved to the position of the greatest hump width and the measurement is taken by viewing from a site that eliminates parallax errors.
3. The measurement includes all of the meat across the hump from the line formed by the dorsal ends of the spinous processes and extended cranially along the dorsal edge of the ligamentum nuchae, across to the dorsal surface of the rhomboideus muscle.
4. Hump height is recorded in gradients of 5mm.

Maturity (Ossification)

Ossification is a measure of the physiological maturity of the carcass being assessed. It is assessed visually and measured in increments with the lowest score being 100 and the highest being 590.

- The maturity of a beef carcass is evaluated by the degree of ossification of the vertebral spinous processes as well as the shape and colour of the rib bones.
- Where possible both sides of a carcass should be evaluated during assessment and the score of the more mature side is to be used for grading.
- Maturity is the development of bone in the cartilage at the end of the spinous process.
- The amount of development determines the ossification score.
- Development starts in the sacral vertebrae (tail or caudal end) and works towards the thoracic vertebrae (head or cranial end).
- Maturity begins as red spots and as it becomes more developed, progresses into yellow, porous bone.
- Maturity can be measured pre and post chilling. Where the measurement is taken pre chilling, the score is adjusted by an addition of one score point (10).

Ossification Standard Table

MSA Standards manual for Beef Grading

SCORE	APPROXIMATE AGE IN MONTHS	SACRAL VERTEBRAE	LUMBAR VERTEBRAL SPINOUS CHARACTERISTICS	11 th , 12 th , 13 th THORACIC SPINOUS PROCESS CHARACTERISTIC	1 st – 10 th THORACIC SPINOUS PROCESS CHARACTERISTICS	RIB BONE CHARACTERISTICS
100	9	No distinct ossification separation.	No ossification.	No ossification.	No ossification.	Narrow and oval. Lot of blood.
110	10	Capping has started. 10% to 20%.	No ossification.	No ossification.	No ossification.	Slightly narrow Slightly oval. Lot of blood.
120	13	Capping to 30% to 40%. Vertical gaps starting to close.	No ossification.	No ossification.	No ossification.	Slightly wide and flat. Lot of blood
130	15	Advanced capping to 50% to 70%. Vertical gaps closing. Some separation still visible.	No ossification.	No ossification.	No ossification.	Slightly wide. Slightly flat. Moderate blood.
140	18	Advanced capping 80% to 90% Vertical Gaps closing, Some separation still visible,	No or minor spots of ossification in one or two vertebrae.	No ossification.	No ossification.	Slightly wide. Slightly flat. Moderate blood
150	20	Capping completed but some cartilage visible.	No or small amounts of ossification in some vertebrae.	No ossification.	No ossification.	Slightly wide. Slightly flat. Moderate blood.
160	22	Capping completed but small amounts of cartilage visible	10% to 20% ossification in some vertebrae.	No ossification.	No ossification.	Slightly wide. Slightly flat. Moderate blood.
170	24	Capping completed. Almost complete fusing.	30% to 40% ossification.	No ossification.	No ossification.	Slightly wide. Slightly flat. Small amount of blood.
180	27	Capping completed. Almost complete fusing.	50% to 70% ossification in all vertebrae.	No or minor spots of ossification in one or two vertebrae.	No ossification.	Slightly wide. Slightly flat. Small amount of blood.
190	29	Capping completed. Almost complete fusing.	80% to 90% ossification in all vertebrae.	Less than 25% ossification in all 3 Spinal process., or 100% in any 1 Spinal process.	No ossification	Slightly wide. Slightly flat. Small amount of blood.
200	30	Complete fusing.	Almost complete ossification.	>25% ossification in all 3 Spinal process., or 100% in any 1 Spinal process.	Minor ossification Slightly red chine.	Slightly wide.. Moderately flat. Traces of blood..
230		Complete fusing.	Almost complete ossification.	30% to 40% ossification in all 3 Spinal process , or 100% in any 1 Spinal process.	Minor ossification in some of the first 6 thoracic vertebrae. 10% to 20% in 7 th to 10 th vertebrae.	Slightly wide Moderately flat Traces of blood

SCORE	APPROXIMATE AGE IN MONTHS	SACRAL VERTEBRAE	LUMBAR VERTEBRAL SPINOUS CHARACTERISTICS	11 TH , 12 TH , 13 TH THORACIC SPINOUS PROCESS CHARACTERISTIC	1 ST – 10 TH THORACIC SPINOUS PROCESS CHARACTERISTICS	RIB BONE CHARACTERISTICS
250		Complete fusing.	Almost complete to complete ossification.	>50% ossification in all 3 Spinal process, or 100% in any 1 Spinal process.	10% to 20% ossification in some of the first 6 thoracic vertebrae. 30% to 50% in 7 th to 10 th vertebrae.	Moderately wide Moderately flat Traces of blood
280		Complete fusing.	Complete Ossification.	>70% Ossification in all 3 Spinal process, or 100% in any 1 Spinal process.	>30% in the 1 st to 10 th vertebrae.	Moderately wide Moderately flat Traces of blood.
300	42	Complete fusing.	Complete ossification.	80% to 90% ossification in all 3 Spinal process , or 100% in any 1 Spinal process.	More than 30% ossification in first 6 th thoracic vertebrae. 50% to 70% in 7 th to 10 th vertebrae.	Moderately wide Moderately flat Traces of blood
350		Complete fusing.	Complete ossification.	Almost complete to complete ossification.	40% to 80% ossification involving all vertebrae.	Wide and flat No blood.
400	72	Complete fusing.	Complete ossification.	Complete ossification . Outlines barely visible.	Almost complete ossification. Outline plainly visible.	Wide and flat No blood.
500	96	Complete fusing.	Complete ossification.	Complete ossification.	Complete ossification. Outline barely visible. White chine.	Wide and flat No blood.
590		Complete fusing.	Complete ossification.	Complete ossification.	Complete ossification. White chine.	Wide and flat No blood..

AUS-MEAT Marbling (AUSMB)

Assessment of marbling is at the M. longissimus dorsi using the AUS-MEAT Standard reference cards.

Refer to: Marbling, in the AUS-MEAT Standards Manual for Chiller Assessment.

Graders must carry visual standards for AUSMEAT marbling and determine each score independently.

MSA Marbling (MSA MB)

MSA Marbling provides an indication of distribution as well as the amount of marbling. Each MSA MB standard photograph is divided into tenths for grading, creating a score range from 100 to 1190 in increments of 10.

Marbling is assessed at the M. longissimus dorsi at the ribbing site of the carcass. Graders must carry visual standards for both MSA and AUS-MEAT marbling and determine each score independently.

AUS-MEAT Meat Colour (MC)

MC is assessed in the M. longissimus dorsi at the ribbed site using AUS-MEAT Standard colour references. MSA requirements for meat colour are 1b-3.

Refer to: Meat Colour in the AUS-MEAT Standard Manual for Chiller Assessment.

Subcutaneous Rib fat (RF)

Measured in millimetres as the depth of subcutaneous fat over the M. longissimus dorsi.
A minimum of 3mm is required, measured at the AUS-MEAT standard site.

Refer to: Rib Fat Measurements in the AUS-MEAT Standard Manual for Chiller Assessment.

p8 Fat (p8)

p8 fat is the measurement of subcutaneous fat in millimetres at the p8 site. A minimum of 5mm is required, measured at the AUS-MEAT standard site.

Refer to: Fat Measurements p8 site, in the AUS-MEAT Standards Manual, National Accreditation Standards.

Fat distribution (FD)

The coverage and distribution of fat over primals is required to be assessed by the grader as adequate. Where parts of the carcass greater than 10cm² are void of fat coverage, primals or the entire carcass are ungraded.

Ultimate pH (pHu)

Ultimate pH is a measurement of lactic acid within the muscle. Measurements are taken in the eye muscle (M. longissimus dorsi) at the quartering site. MSA requirements for pH are below or equal to 5.70. Ultimate pH measurements must be taken with a meter fitted with a temperature adjustment (Bendall Equation) to 7° Celsius.

Rinse

Rinse is defined as carcasses that have undergone a process known as vascular infusion or carcass rinsing. (Can be identified as a lot rather than individual)

Hide Puller Damage

The coverage and distribution of fat over primals is required to be assessed by the grader as adequate. Where parts of the carcass (> 10cm²) are void of fat due to damage caused by the removal of the hide, primals or the entire carcass are ungraded.

Hormone Growth Promotant (HGP)

Records of Hormone Growth Promotant (HGP) treatment shall be recorded against each carcass. This information is taken from the National Vendor Declaration. (Can be identified as a lot or individual.)

Grade Codes

A grade code is a coded observation for which a body has met or failed an MSA requirement. The MSA grade codes are as follows:

0-meets all MSA requirements.

1-subcutaneous fat depth out of specification.

3 -fails to meet adequate overall fat distribution of less than 10cm² on a single primal. Affected primals may be removed.

4- pHu greater than 5.70.

5 -fails to meet meat colour specifications of 1b – 3.

6- meets MSA requirements but fails company imposed specification.

7- miscellaneous eg, eccymosis, bruising.

8- fails to meet AUS-MEAT specifications.

9- fails to meet hide puller specifications of less than 10cm² on a single primal. Affected primals may be removed.

MSA DNA source verification

The Authorised Authority shall support those Enterprises wishing to use the DNA traceback systems.

This data will be stored in the MSA database and information will be recorded and made available to the owner of the data for the purpose of DNA tracebacks.

DNA sample collectors shall be provided by commercial parties and not the Authorised Authority.

MSA On – farm responsibilities

On-farm responsibilities - all cattle production systems

- Producers must be registered with MSA to supply cattle for grading; (minimum 2 days for registration administration)
- Slaughter by the day after dispatch;
- No secondary sexual characteristics;
- No cattle that have been severely sick or injured;
- No cattle of poor temperament;
- All cattle must reside on the property of dispatch for a minimum of 30 days prior to dispatch;
- Cattle are to be managed as a single mob for a minimum of 14 days prior to dispatch for slaughter; and
- MSA Vendor Declaration must be delivered with the cattle.

MSA Saleyards responsibilities

Saleyard responsibility – livestock exchange consignment

- Livestock exchange and saleyard to be licensed and have completed training as defined by the Authorised Authority;
- Livestock exchange or saleyard must have systems in place that will be monitored from time to time to verify compliance against the MSA Standards Manual for Saleyard Consignment as determined by the Authorised Authority;
- MSA Vendor Declaration to accompany cattle to and from livestock exchange and saleyard;
- MSA eligible cattle to be clearly identified, at all times;
- *Cattle groups are not to be mixed at any point from farm to slaughter, excluding split mobs*
- No cattle that have been severely sick or injured at the time of the sale;
- No cattle of poor temperament;
- Cattle shall be held on soft standing, preferably under cover within the livestock exchange or saleyard facility, a minimum period of time required for the actual sale.
- Cattle within the livestock exchange or saleyard, shall have access to clean fresh water at all times.

Agent responsibilities

Agent responsibilities

- Agents must be registered; and
- Adhere to the Standards Manual Saleyard Consignment..

Processor responsibilities

Processor responsibilities

- Cattle shall be slaughtered within 36 hours after dispatch from the farm or property via the saleyard pathway.

MSA Enterprise Licence categories

Each Enterprise where MSA technology is integrated into the operation and activities, shall be categorised and accredited accordingly by MLA.

Monitoring and Auditing shall be required according to level of uptake.

The cost of MSA Services can be obtained from Schedule of Fees and Services.

Categories

Level 1 license: company graders with Trademark

The company has completed all the training required by the Authorised Authority / Meat Standards Australia as defined in the attached table.

Graders are employed and the sole responsibility of the Enterprise.

- Plant survey:
 - The Authorised Authority shall carry out a plant survey. All outcomes and corrective action are reported to the Enterprise.
- Training requirements:
 - It is the sole responsibility of the Enterprise to maintain the necessary training requirements in accordance with MSA company Grader accreditation.
 - Annual refreshers are recommended but not required.
- Technology updates:
 - Once new developments of the MSA technology are released, updates shall be delivered, including training where it is required.
- Monitoring:
 - Each Enterprise shall maintain a third party quality assurance accreditation with a recognised body.
 - All records of MSA related activities within the Enterprise shall be fully maintained and available to the Authorised Authority or representatives of the Authorised Authority.
 - A random sensory verification and DNA traceback program will be run by the Authorised Authority or its nominated agent as determined by the Authorised Authority.
 - Audit guidance material in this MSA Standards Manual.
- Trademark usage;
 - Full use of the MSA Trademark within the requirements detailed in the MSA Standards Manual for MSA End-User..

Level 2 license: licensed MSA technology with no Trademark

Where the company has completed all the training required by the Authorised Authority / Meat Standards Australia as defined in the attached table.

This license allows the full use of MSA systems to differentiate product on the basis of eating quality but without the use of the Trademark.

- Plant survey;

- The Authorised Authority shall carry out a plant survey. All outcomes and corrective action are reported to the Enterprise.
- Training requirements:
 - Training is only required for the Grader on site.
 - Task specific training is not required but is recommended.
 - Annual refreshers are recommended but not required.
 - Appointment of a MSA coordinator.
- Technology updates:
 - Once new developments of the MSA technology are released, updates are recommended but not required.
- Monitoring:
 - Enterprises shall ensure that there are Quality assurance systems in place in accordance with these Standards.
 - Required where MSA Standards are incorporated within the Enterprise operating procedures.
- Trademark usage;
 - No usage of the MSA Trademark.
- Other
 - Use of third Party Graders:
 - Where graders are contracted to the Establishment, both parties must satisfy the Authorised Authority that the License Terms and Conditions are met.
 - The actions of the third Party Grader are the responsibility of the Enterprise, while the grader is responsible for maintaining their own status.

Level 3 license: partial MSA technology with no Trademark

Where the Enterprise adopts sections of the MSA technology. Meat Standards Australia can provide training in the aspects requested by the Enterprise.

- Plant survey:
 - Optional.
- Training requirements:
 - Training is optional for the Grader on site.
 - Task specific training is optional for each of the departments in the Enterprise.
- Technology updates:
 - Once new developments of the MSA technology are released, updates are recommended but not required.
- Monitoring:
 - Optional for Enterprises to ensure that there are QA systems in place in accordance with these Standards.
 - Optional where MSA Standards are incorporated within the Enterprise operating procedures.
 - There is no requirement to report findings of Audits to the Authorised Authority.
- Trademark usage:
 - No usage of the MSA Trademark.

The available options for uptake of the MSA technology are listed in the below table.

Options for using MSA technology

License category	Uptake level	Initial plant survey	Fully trained Grader	Task specific training	Annual refresher course	Technology updates	In-plant monitoring
Level 1	Company Graders with trade mark	✓	✓	✓	Recommended	✓	Monthly or at other frequency determined by the Authorised Authority.
Level 2	Licensed MSA technology with no Trademark	✓	✓	Recommended	Recommended	Recommended	
Level 3	Partial MSA technology with no Trademark	Optional	Optional	As requested	Optional	Recommended	

Accreditation Criteria

Enterprise training and other requirements.	Company Graders with MSA Trademark.	Licensed MSA technology with no Trademark	Partial MSA technology with no Trademark
	Level 1	Level 2	Level 3
1B. Cattle handling	✓	Recommended	Optional
2B. MSA Pre- slaughter requirements	✓	Recommended	Optional
3B. MSA Beef slaughter systems	✓	Recommended	Optional
4B. pH measurement and decline	✓	Recommended	Optional
5B. MSA Beef chiller requirements	✓	Recommended	Optional
6. MSA grading (Graders only)	✓	✓	Optional
7B. MSA Beef boning room req.	✓	Recommended	Optional
8B. MSA Beef load out requirements.	✓	Recommended	Optional
9. MSA Meat Science (Coordinator only)	✓	Recommended	Optional
10. Initial plant survey	✓	Optional	Optional
11. Annual refresher	Recommended	Recommended	Optional
12. Technology updates	✓	Recommended	Optional
13. In-plant monitoring	✓	As part of QA system	Optional
14. MSA coordinator	✓	Recommended	N/A
15. QA system	✓	✓	Optional





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MSA Beef Grading Audit guidance material

Abattoir, boning rooms and further processing enterprises

Guidance Material provides a summary of key aspects that are required of an abattoir when processing MSA eligible cattle. It has been designed for use as an audit tool for approved companies carrying out independent audits on behalf of MSA. This document references directly to the MSA Standards Manual and the appendices. Auditors must be familiar with MSA requirements outlined in this Manual.

MSA shall accredit Auditors as proficient to Audit MSA Enterprises. All accredited Auditors shall be given a self-directed learning package, including reference material specifically relating to the requirements of MSA technology.

Specific Audit times and control is maintained by each Authorised Authority. The MSA coordinator must be fully involved in the Audit process.

Performing the Audit

The Auditor must undertake the following steps where performing an Audit:

- Entry meeting – a brief meeting to outline the extent of the Audit and any assistance required. The approximate time of the exit meeting will also be arranged.
- Conduct the Audit using this guidance material and MSA Standards Manual as a reference.
- Record objective results on the Audit report. Include specific details of any non-conformances.
- Expand the content of the Audit report if additional questions become necessary.
- Complete all documentation including Corrective Action Requests as required.
- Exit meeting – present Audit findings and initiate Corrective Action Requests if necessary.
- Serious deficiencies will be immediately reported to the QA coordinator of MSA.
- A full report shall be supplied to the MSA QA coordinator within two working days of the Audit.
- For more details regarding the Audit of Enterprises please see Audits, in the MSA Standards Manual.

Audit requirement	Audit item description
1.0 Quality Management System	
<p>1.1 The enterprise must establish and maintain a documented Quality Management System that meets MSA program requirements..</p> <p>This system must include the following activities:</p> <ul style="list-style-type: none"> • management responsibility • document control • product identification and traceability • process control • inspection and testing process • control of non-conforming product • corrective and preventative action • handling, storage, preservation, packaging and delivery • quality records • internal quality audits 	<p>The enterprise must establish and maintain documented procedures for:</p> <ul style="list-style-type: none"> • Defining the responsibility, authority and interrelations of personnel who manage, perform & verify work relating to MSA systems. • Controlling specified documents relating to its MSA systems. A list of controlled documents as specified by an Authorised Authority. • Ensuring practices relating to its MSA systems and product are accurately identified and traceable. Identification method must be recorded. • Ensuring processes which directly affect the Enterprise's MSA systems and product are carried out under controlled conditions. • Inspection and testing of practices relating to the Enterprise's MSA systems and product, e.g. calibration and maintenance requirements. • Ensuring non-conforming product is prevented from unintended use or despatch. All MSA non-conformances to be documented. • Ensuring that effective corrective and preventative action is taken concerning the Enterprise's MSA practices in all areas. • Ensuring MSA product is correctly handled, stored, preserved, packaged and delivered in accordance with the MSA program. • Ensuring that all MSA practices are internally audited. • Ensuring that records verify compliance with MSA program requirements and effective operation of the QMS. Including: <ul style="list-style-type: none"> ○ vendor declarations – 6 months ○ training records – 2 years ○ grading data – 12 months ○ internal audit records – 2 years <p>Failure to have the above systems in place will incur a MAJOR non-conformance.</p>
<p>1.2 A detailed corrective action plan must be in place for each area and staff must be aware of action to take following a non-conformance.</p>	

Audit requirement	Audit item description
1.3 The enterprise must appoint one or more MSA coordinators who are management representatives, with the responsibility and authority to ensure that the integrity of the MSA program is maintained in the enterprise.	Duties of the MSA coordinator are found in section 3.5 of the MSA Standards Manual for beef processing.
2.0 Livestock supply	



<p>2.1</p>	<p>All producers supplying MSA cattle must be registered.</p>	<p>Records must show that all suppliers of MSA cattle are registered. Acceptance of cattle as MSA from unregistered producers or saleyards is a MAJOR non-conformance.</p>
<p>2.2</p>	<p>All employees managing MSA suitable cattle must understand the requirements for MSA licensed processors.</p>	<p>Records must show staff working in this area have had adequate training on MSA requirements and are aware of what they are. Staff must also know who the site MSA coordinator is.</p>
<p>3.0 Lairage</p>		



3.1	All cattle must be kept as a despatched mob upon arrival.	<p>Cattle that are mixed in lairage must be excluded from MSA grading. If it is found that cattle have been mixed and that no appropriate action has been taken to rectify this non-conformance, a MAJOR non-conformance is to be given.</p> <p>The following points must be evaluated:</p> <ul style="list-style-type: none"> Number of head Tropical breed content No cows that have calved <p>Abattoir Verification section must be signed off by an authorised person. Failure to carry out this check should be reported as a MINOR Non-conformance. Vendor Declarations must be held for a minimum period of six months.</p> <p>If it is observed that cattle are not being handled quietly then an OBSERVATION should be raised.</p>
3.2	Evidence must be available to show that all cattle are cross-checked against their MSA Vendor Declaration.	
3.3	Cattle must be handled quietly to reduce stress.	
Audit requirement		Audit item description

3.4	Cattle must not be drafted on plant prior to slaughter.	If drafting has taken place then there must be evidence to show that written approval has been given by MSA. If no evidence showing approval is supplied, a MINOR corrective action is to be raised.
3.5	Cattle must be slaughtered within 1 day after direct consignment and within 36 hours after dispatch from saleyards.	Dispensations can be given by MSA on a case by case basis to kill cattle outside the required timeframe. The abattoir must keep these dispensations on file.
3.6	A system must be in place to maintain MSA and Lot identification until slaughter.	A MAJOR corrective action should be raised if ID cannot be established by other means. A MINOR corrective action should be raised if ID can be re-established and controlled effectively to ensure positive ID.
4.0 Slaughter floor		
4.1	All cattle types are evaluated and there is evidence to demonstrate that carcasses are meeting the pH/Temperature window monthly.	Cattle being processed without electrical input approval and/or records to show conformance to the pH/Temp window, this should rate as a MAJOR non-conformance. If approved cattle types and electrical inputs are being adhered to but decline results show that they miss the window and records are available to show that corrective action is being taken, then this should rate as a MINOR non-conformance. If there is no evidence of any action being taken then this should rate as a MAJOR non-conformance.
4.2	Declines are conducted in a manner that is acceptable and in accordance with the processing responsibilities defined in this MSA Standards Manual for Beef Grading .	Refer to Processing Responsibilities, MSA Standards Manual for Beef Grading.
4.3	The procedure used for monitoring and recording stimulation and other electrical inputs on MSA carcasses must be documented. Daily records of the electrical input monitoring must be kept.	If 4.1 and 4.2 do not rate satisfactory, then a MAJOR non-conformance is incurred.

Audit requirement		Audit item description
4.4	All MSA carcasses are cleared from the slaughter floor for breaks longer than 20 minutes.	If carcasses are not cleared during breaks longer than 20 minutes but records show that carcasses are meeting the pH/Temperature window, then a non-conformance is not to be raised. If carcasses are not reaching the window then a MAJOR non-conformance is to be raised.
4.5	An effective system must be in place for the transfer of ID from live animal to carcass.	If no effective system is in place to ensure traceability from live animal to carcass then a MAJOR non-conformance is raised. If ID can be re-established and the transfer process controlled then a MINOR non-conformance is raised.
5.0 Chilling (This section to be covered if processor is approved/applying to be approved by MSA to grade their own products)		
5.1	Chiller cycles from chillers used to store/ chill MSA carcasses must be set to optimise pH/Temperature declines meeting the window.	As part of the reporting requirements of declines, records of chiller management need to be included when reporting. If it can be shown that MSA carcasses are meeting the window and the process is adequately controlled then a MINOR non-conformance should be raised. If trials are being conducted then it is to be done in such a manner as to not adversely affect other MSA product in the chiller.
5.2	Records of monthly declines carried out are available, up to date and sent to MSA.	If records are not consistently kept, a MINOR non-conformance shall be raised.

Audit requirement	Audit item description
6.0 Grading	
6.1	All graders must hold current AUS-MEAT and MSA grader chiller assessor status.
6.2	There must be a defined and effective procedure for identifying MSA compliant carcasses.
6.3	DNA sample collection, recording, storage and delivery protocol must be carried out as per MSA requirements.
6.4	Grading equipment must be adequately maintained, calibrated at the required frequencies and records kept of calibrations.
6.5	Evidence must be available to show that the company is providing mandatory feedback requirements to the vendor and MSA.

Audit requirement		Audit item description
7.0 Boning room operations		
7.1	Procedures must be in place to ensure effective product identification and segregation.	Severity of rating given depends on the potential for loss of identification.
7.2	Procedures must be in place to ensure compliance to MSA requirements for labelling and product integrity.	Refer to Standards Manual for End Users. Covers use of inserts, carton label information and correct identification of MSA product. If carton end label does not reflect an eating quality value, release date and cook method then a MAJOR non-conformance is to be issued. If inserts are not in bags then a MINOR non-conformance is recorded.
7.3	Records must be available to show compliance to MSA labelling and product integrity requirements.	If no records are available then a MAJOR non-conformance is incurred. If not all records are available but the system appears to be in control then a MINOR non-conformance is raised.
8.0 Load out and dispatch		
8.1	Procedures must be in place for monitoring MSA product identification on documentation.	If no procedure is in place then an OBSERVATION is to be noted. If product is not clearly identified on paperwork or invoices then a MINOR non-conformance is to be raised. If carton labels or butcher labels are incorrect then a MAJOR non-conformance is to be raised. Butcher labels must travel with the load but not necessarily attached to the body, however, must be identifiable to a carcass ticket or number.

Audit requirement		Audit item description
9.0 Training Requirements		
9.1	Operatives performing MSA duties must have completed the appropriate MSA Enterprise training modules.	MSA Coordinator must complete MSA Modules 1-5 and 7-9. Livestock receival and lairage operatives must complete MSA Modules 1B and 2B. Slaughter floor operatives must complete MSA Module 3B. Operatives responsible for conducting pH/temperature declines must complete MSA Module 4B. Chiller operatives must complete MSA Module 5B. Operatives responsible for grading of carcasses must complete MSA Module 6. Boning room operatives must complete MSA Module 7B. Loadout operatives must complete MSA Module 8B.
9.2	The staff member(s) responsible for MSA product in the boning room must hold a current statement of attainment for AUSMEAT Beef Specification course, Level 2.	Untrained operatives performing MSA related duties rates as a MAJOR non-conformance.

MSA Palatability Analysis of Critical Control Points

- This table is intended as guide to the procedures necessary to adhere to the MSA Standards. They are not limited to the detail below.

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
Livestock supply	1.	Cattle supplied by an unregistered producer.	Cattle buyers aware of MSA requirements.	Major No cattle accepted from unregistered producers.	Purchase contracts, livestock receival, stockman, QA livestock receival sheet.	Cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	Vendor declarations. Valid producer registration number.
Transport of cattle	2.	Stressed, agitated or bruised cattle.	Cattle handled in a manner to reduce stress, minimal use of goads or prodders.	Reported as observation.	Third party Audit reports, slaughter floor bruise reporting, livestock receival inspection report. Head stockman.	Re-training of transport operators. Corrective action requests.	Grading results decrease in numbers of dark cutters.
Lot ID	3.	Loss of lot ID or paperwork.	Transport operator aware of MSA paperwork requirements.	zero Major or minor depending on if ID can be established by other means.	Checked at receival by livestock supervisor. Recorded in livestock receival log. QA officer monitors three times per day per production shift. By reviewing the livestock receival log and cross checking.	Lot ID may be verified by position of pen in truck loading plan. Vendor declaration faxed to plant prior to cattle being slaughtered. If lot ID cannot be verified then cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	External Audit livestock monitoring sheet. Corrective action requests.
Mixing in lairage	4.	Mixing in transport	Drivers/ unloaders trained in MSA requirements.	Major or minor depends on if ID can be re-established by other means.	Checked at receival by livestock supervisor. Recorded in livestock receival log.	Cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	Audit livestock monitoring sheet. Corrective action requests

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
Vendor declaration	5.	Incorrect vendor declaration	Producers trained in filling out vendor declarations	Minor	Checked at receipt by livestock supervisor. Recorded in livestock receipt log. QA officer monitors that these checks are done.	If missing information cannot be obtained. Reject for MSA grading. If missing information can be obtained and doesn't breach MSA guidelines then may be processed as MSA.	Livestock monitoring sheet. Corrective action requests.
Vendor declaration	6.	No MSA vendor declaration.	Producers trained in filling out vendor declarations	Major No cattle accepted for MSA grading without vendor declaration.	Checked at receipt by livestock supervisor. Recorded in livestock receipt log. QA officer monitors these checks.	Cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	Livestock monitoring sheet. Corrective action requests.
Tropical breed content	7.	Incorrect tropical breed content on vendor declaration.	Producers trained in tropical breed content assessment.	Minor	Checked at receipt by livestock supervisor or QA officer. Recorded in livestock receipt log and indicated on MSA vendor declaration.	Tropical Breed Content assessed by livestock supervisor. Animals processed at this percentage. Changes recorded on vendor declaration.	Altered Tropical Breed Content percentage on MSA vendor declaration and/or livestock receipt log.
Livestock receipt and lairage	8.	Mixing of lots	Training of yardmen and livestock unloaders in handling MSA cattle.	Zero or Major depends on if mixing is of MSA and non-MSA cattle	Livestock supervisor - Livestock inspection sheet. - QA officer monitors that these checks are done.	Cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	Livestock monitoring sheet. Corrective action requests.
Hydration	9.	No access to water.	All MSA cattle unloaded into pens that are watered.	Minor..	Livestock supervisor Livestock inspection sheet. QA officer monitors that these checks are done.	Cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	Altered Tropical Breed Content % on MSA vendor dec. and/or livestock receipt log.

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
Drafting in lairage	10	Cattle drafted in lairage.	Cattle handlers trained in MSA requirements.	Minor.	Livestock supervisor, livestock inspection sheet. QA officer monitors these.	Cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	Livestock monitoring sheet. Corrective action requests
Loss of ID	11	Loss of lot ID	Operator aware of MSA lot ID requirements. Procedure developed to ensure maintenance of ID.	Zero. Major or minor depends on if ID can be re-established by other means.	Checked by livestock supervisor. Recorded in livestock receival log and/ or livestock monitoring sheet. QA officer monitors that these checks are done.	Lot ID may be verified by position of pen in truck loading plan. Vendor declaration faxed to plant prior to cattle being slaughtered. If lot ID cannot be verified then cattle rejected for MSA grading. Recorded in livestock monitoring sheet.	External Audit livestock monitoring sheet. Corrective action requests.
Delivery	12	Not killed day after dispatch, (Direct consignment) (36 hours through the saleyards pathway)	Livestock and kill program coordination.	Zero – dispensation may be given on a case by case appraisal. Minor	Kill coordinator, daily kill program. Livestock receival sheet. Kill floor monitoring sheet. QA officer monitors requirements.	Apply for dispensation from MSA, otherwise cattle to be rejected for grading. Proof of dispensation must be available to the Auditor.	Letter of dispensation. Kill floor monitoring sheet. Records of downgrades.
Slaughter floors	13	Loss of lot ID	Operator aware of MSA lot ID requirements. Procedure to ensure ID maintenance.	Zero. Major or minor depends on if ID can be re-established by other means.	Checked by slaughter floor supervisor. Recorded in slaughter floor monitoring sheet. QA officer monitors that this requirement is met.	If lot ID cannot be verified then cattle rejected for MSA grading. Recorded in slaughter floor monitoring sheet.	Kill floor records, kill sheet. Corrective action requests. Audit reports.

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
Stunning	14	Ineffective stun	Trained operators only employed in this task	Observation	Checked by slaughter floor supervisor. Recorded in slaughter floor monitoring sheet. QA officer monitors that this requirement is met.	Recorded in slaughter floor monitoring sheet. Operator retrained.	
Electrical inputs	15	Electrical input does not meet set requirements. This includes but is not limited to stimulation, immobilisers & rigidity probes.	All operators trained and aware of MSA requirements for electrical inputs. Documented times and current for inputs are available and monitored daily	zero Major	Checked by slaughter floor supervisor. Recorded in slaughter floor monitoring sheet. Monitored at every change from non-MSA to MSA cattle. QA officer monitors that this requirement is met.	Bodies that have received either excessive or inadequate electrical inputs are rejected for grading until the last clear check. QA officer recorded in slaughter floor monitoring sheet.	Kill floor records, kill sheet. Corrective action requests. Audit reports. pH/ temperature decline records.
Carcase ticketing	16	Carcase tickets inaccurate or missing	Checked by slaughter floor supervisor or QA officer. Recorded in slaughter floor monitoring sheet.	Major	Monitored by QA officer Recorded in slaughter floor monitoring sheet.	If data can be verified by existing procedures then carcass tickets may be applied in the chiller prior to grading. If tickets are not present while grading, carcass to be rejected for MSA grading. QA officer or grader records.	Grading reports. QA monitoring reports

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
Slaughter floor breakdowns	17	Breakdowns or breaks longer than 20 minutes	No bodies held on chain for more than 20 minutes due to breakdowns or stoppages.	Zero Depends on the conformance to the pH/ temp window. Major if the window not met, or if no validation records.	Checked by QA officer or supervisor. Recorded on daily monitoring sheet and in breakdown log. MSA downgrade sheet.	Any bodies that have been held on the chain for longer than 20 minutes are rejected for MSA grading. (Due to possible failure to meet the pH/ temperature window)	Break down log. Daily monitoring sheet. MSA downgrade sheet.
Chillers	18	Bodies fail to meet the pH/ temperature decline window	Stimulation, electrical inputs, chain speed set by MSA recommendation. To ensure that the bodies meet this window. (This may vary with cattle types)	Major. Continued non-conformance would rate as critical.	MSA graders currently monitor conformance. Monthly monitoring checklist. pH/ temperature recording form.	MSA will conduct trials to establish what settings best suit each establishment. Monthly monitoring checklist, pH/ temperature recording form.	pH/ temperature recording form. Monthly monitoring checklist Audit reports.
Grading	19	Grader not current for either AUS-MEAT or MSA assessment.	Only accredited and current chiller assessors and MSA graders able to conduct grading	Major	Oscap records checked by QA officer prior to the grader starting each production shift.	Grader unable to grade until currency has been attained. Recorded on daily monitoring sheet.	Oscap currency report held by plant QA officer.

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
pH meter operation	20	Calibration of the pH meter has failed.	Meter maintained and buffers are within use by date limits.	Major if used for grading.	Monitored by Graders. If a meter starts to drift excessively then it is removed from use or sent out to be fixed.	Meter is removed from use until fixed. Recorded in asset register.	Faulty equipment form.
pH meter operation	21	pH meter not accurately calibrated at the required intervals.	Calibration of pH meters to be done at commencement of and as required during grading.	Major if drift has occurred.	Monitored by Graders. If a meter starts to drift excessively then it is removed from use or sent out to be fixed.	Meter is removed from use until fixed. Recorded in asset register.	Faulty equipment form.
pH meter operation	22	pH/ temp probe not calibrated monthly or when a new probe is used.	Meters are calibrated monthly	Major if used for grading.	Monitored by grader and recorded.	Meter removed from use until calibration completed successfully.	Records
Computer programs	23	Incorrect DCU files used for grading. (Plant boning groups don't match DCU set files.)	Version updates are available from the MSA trade development officers	Major	Monitored by graders and plant QA. MSA internal Audits.	Bodies are downgraded.	Accurate feedback. Internal Audit records.
DNA sampling (If Applicable)	24	DNA sample not recorded or grader unsure of body that sample is from.	DNA sample taken for every body presented for grading.	Major	Monitored by graders. Graders are aware that they are responsible for the accurate collection of DNA. Recorded in the system.	No DNA sample taken or recorded. Body rejected for grading or stamps removed. Bodies can be re-graded provided DNA sample is taken.	Grading records. Internal Audit reports.

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
DNA storage and transport (If Applicable)	25	DNA samples not stored and/or transported in a manner that ensures their quality is maintained.	DNA samples are stored and transported in an appropriate manner as to ensure their integrity is maintained	Major	Monitored by graders. Graders are aware that they are responsible for the accurate collection of DNA. Recorded in the system.	No DNA sample taken or recorded. Body rejected from grading or stamps removed.	Grading records. Internal Audit reports.
MSA Beef Grading Standards	26	Beef Grading Standards not followed.	Graders follow chiller assessment and MSA standards in relation to the process of evaluating beef quality.	Major	Monitored by on plant QA throughout production shift. Recorded on daily grading monitoring sheet.	Bodies will not be assessed/graded until the Standards have been met. If the Standards cannot be met then the bodies will not be assessed/ graded.	Grading records. Internal Audit reports.
Carcase stamping	27	Stamping does not reflect boning group assigned	Graders are responsible for assuring the accuracy of stamping.	Zero Major	Monitored by on plant QA 3 times per day per production shift. Recorded on boning room intake sheet.	Prior to boning correct stamp applied. After boning production run downgraded to the lowest quality range of product in the carton.	Grading records. Internal Audit reports. Visual recording from evidence.
Boning room segregation	28	No clear segregation of product at boning change over.	Procedure developed for control of this.	Major	Boning room QA monitors every changeover. Recorded on boning QA check sheet.	After boning production run downgraded to the lowest quality range of product in the carton.	Grading records. Internal Audit reports.
Inserts	29	Inserts not placed in bags.	Procedure developed for the monitoring of this.	Observation	Boning room QA 3 times per day per production shift. Recorded on boning QA check sheet	Product reworked or rejected.	Grading records. Internal Audit reports.

Process step	CCP No.	Potential hazard	Preventative (control) measure	Critical limit and rating	Monitoring procedure, person, frequency and where recorded	Corrective Action (when deviation occurs) person, where recorded	Verification methods
Carton labels	30	Carton labels incorrect or do not reflect boning groups being packed.	Procedure for monitoring should be developed.	Major	Boning room QA 3 times per day per production shift. Recorded on boning QA check sheet.	After boning production run downgraded to the lowest quality range of product in the carton.	Grading records. Internal Audit reports. Visual recording from evidence.
Load out	31	MSA product not clearly identified on invoices or paper work.	QA ensure documentation contains reference to current MSA license number	Minor	Monitored by load out QA during production of MSA product	MSA license number recorded on documentation or invoices.	Delivery/ invoice records. Internal Audit reports. Visual monitoring.