Guideline for the Development and Implementation of Environmental Management Systems at Beef Cattle Lot Feeding

Prepared for

Meat & Livestock Australia

Locked Bag 991
NORTH SYDNEY NSW 2059

8 July 2003

33569-022-559

URS

Contents

Contents

List of Tables

1.1 Background

This document has been prepared based on the *MLA Manual for the development of Environmental Management Systems at Meat Processing Plants in Australia* (Dames & Moore, April 1999) and the detail of Australian Country Choice's certified Environmental Management System at their Brisbane Valley Feedlot. This guideline provides companies involved in beef cattle lot feeding with sufficient information to develop an Environmental Management System compatible with ISO14001.

A management system is the framework that provides the tools for an organisation to manage its **processes** and **people** to achieve its environmental objectives and targets in the most efficient manner. Generally, Environmental Management Systems include; organisational charts, environmental policies, procedures and planning for development and implementation, practices, checklists, audits, reviews and avenues for continual improvement.

This guideline, commissioned by Meat & Livestock Australia, aims to provide generic environmental management principles and give guidance on how Beef Cattle Lot Feeding, by considering specific processes and information requirements, can develop an effective, site specific Environmental Management System that is consistent with ISO 14001.

1.2 The Guideline

The guideline is split into two sections: Part A – Generic Manual which provides guidance on addressing ISO14001 elements; and Part B Examples which provides examples of key documents to be developed for the EMS. The guideline is a self-help tool and as such gives examples and suggested actions for developing your Environmental Management System. It should be thought of as a template to kick-off the thought processes needed to implement Environmental Management Systems and as such you should edit the format of the templates used in the manual to suit your operations.

Part B of the guideline provides examples of the documentation created at Brisbane Valley Feedlot. The purpose of these examples is to allow you to 'see' the detail of how Brisbane Valley Feedlot has developed each of the specific requirements of their Environmental Management System.

It is important that the examples provided are used as examples only and that they are not used as direct templates to be copied. It is essential that you develop your own system components and that you use the examples to stimulate your thoughts on how the concepts apply to your facility.

This document should be used as a guide only. Neither the MLA, its consultants nor ACC, all involved in the preparation of this manual, accept any responsibility or any liability incurred as a result. The steps outlined are just that – they are steps recommended to develop an Environmental Management System. The degree of diligence in which the steps are followed and the levels of experience and expertise which the personnel involved exhibit will dictate the comprehensiveness and suitability of the Environmental Management System that is developed.

It is recommended that if you are starting to develop an EMS for the first time that you follow the following steps. If you are modifying an existing system to conform to the requirements of a robust ISO14001 compatible system then it will assist you identifying which steps you need to take and which will have already been achieved.

1.3 Suggested Steps and Timing for Development of Your EMS

The following table provides broad steps and timing for the development of the Environmental Management System. Further detail on steps to be taken is provided in the EMS Implementation Checklist (Section 7), which can be used to guide the EMS development process.

Table 1

Suggested Steps and Timing for Development of Your EMS

Step	Requirement	Approximate Timing
1	Nominate an appropriate group or individual to develop the system (Section 5.1).	Week 1
2	Undertake a gap analysis and/or initial environmental review (Section 2)	Week 1 to 4
3	Develop an Environmental Policy (Section 3)	Week 5
4	Conduct generic Environmental Management System awareness training (Section 5.2)	Week 6
5	Prepare process flow diagrams (Section 4.1)	Week 6
6	Prepare environmental issue identification and risk management procedure (Section 4.1)	Week 7
7	Prepare significant aspects register (Section 4.1)	Week 7
8	Prepare legal and other requirements procedure and register (Section 4.2)	Week 8
9	Establish objectives and targets and environmental improvement plans (Section 4.3)	Weeks 9 to 12
10	Establish internal and external communication mechanisms (Section 5.1.2 and 5.1.3)	Week 13
11	Develop operational control procedures for the significant aspects (Section 5.5.1)	Weeks 14 to 18

Step	Requirement	Approximate Timing
12	Develop monitoring procedures for significant aspects (Section 5.5.2)	Weeks 14 to 18
13	Establish a Non-Conformance reporting system (Section 6.1)	Week 19
14	Establish a system for controlling documents and records (Section 5.3)	Weeks 1 to 20
15	Develop an environmentally focussed emergency control plan (Section 5.4)	Week 20
16	Define Internal Responsibilities and Authorities (Section 5.1)	Weeks 20 to 22
17	Communicate environmental responsibilities (Section 5.1)	Week 23
18	Train the workforce on the new system requirements (Section 5.2).	Weeks 24 to 28
19	Undertake a full internal audit of the system (Section 6.2.2)	Week 29
20	Hold a Management Review Meeting (Section 6.2.3)	Week 30

2.1 Gap Analysis

In organisations where existing management systems are being operated, it is beneficial to undertake a gap analysis of the existing system. The gap analysis will identify the amount of work that is required to integrate your environmental management system into the site's existing system. Specifically, the EMS Gap Analysis would compare the site's existing management systems against the requirements of ISO 14001. This process would identify the gaps that need to be bridged in order to develop and implement an EMS at the site in line with ISO 14001. The gap analysis would aim to build on the existing management systems where they are found to be functioning effectively, and work towards the integration of environmental management. This approach aims to minimise unnecessary effort. The Gap Analysis will also review EMS performance data. Table 2 provides an example format for undertaking the gap analysis:

Table 2
Gap Analysis Format

ISO 14001 Element	Current Status	Actions Required	By Who	By When
4.2 Environmental Policy	Policy does not include a commitment to comply with relevant legislation and regulation	1. Revise policy to include compliance with legislation commitment and obtain approval from management.	Env Rep	27/06/04
4.3.2 Legal and other requirements	Procedure exists. Register does not include other requirements including commitments to Greenhouse Challenge.	2. Revise register to ensure that other requirements are included.	Env Rep	30/07/04

2.2 Initial Environmental Review

For sites where there is limited documented environmental information about the operation, an initial environmental review (IER) is a beneficial process. Results of the initial environmental review will assist with the identification of site issues and the ranking of significant issues (refer to Section 4.1). There are a number of approaches to undertaking an IER. At the Brisbane Valley Feedlot, the focus was on undertaking an environmental compliance assessment and gathering relevant information and documentation on 'best practice' environmental management at feedlots.

The environmental compliance assessment involved development of the legal and other requirements register for the site. A detailed environmental compliance assessment against environmental licence requirements and key pieces of legislation was then undertaken to gain an understanding of current compliance status.

The 'best practice' review involved a literature review of available documentation of relevance to environmental management at feedlots. An action plan was developed to identify areas where improved practices could be integrated into the feedlot operations to improve site performance.

Section 4.2 of the ISO14001 Standard requires that *"Top management shall define the organisation's environmental policy and ensure that it:*

a) is appropriate to the nature, scale and environmental impacts of its activities, products or services;

b) includes a commitment to continual improvement and prevention of pollution;

c) includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organisation subscribes;

d) provides the framework for setting and reviewing environmental objectives and targets;

e) is documented, implemented and maintained and communicated to all employees; and

f) is available to the public.

3.1 Defining the Scope of your Environmental Policy

The first essential part of any Environmental Management System is a "commitment" to the concept of having an Environmental Management System, and then a commitment to the methods developing the system, i.e. the identifying, planning, implementing and checking phases of the Environmental Management System.

The Environmental Policy is the documented expression of this commitment to employees, suppliers, contractors and the public. The policy states how, through a management system, the Feedlot plans to manage its impacts on the environment. It provides a focus and direction for the environmental efforts of the Feedlot. The policy must be defined by top management. Without such a commitment by top management, it cannot be expected that the employees of the company will take any notice of, or participate in, environmental initiatives.

3.1.1 Issues to be considered in an Environmental Policy

Details of the scope of the environmental issues and the areas of the feedlot operation can be included in the Policy. In particular, the physical boundaries of the operation should be included. Will the EMS cover impacts from cattle pick up from farms as well as cattle delivery to the abattoirs?

There are many types of issues that can be considered for inclusion in the Environmental Policy. Some of these are listed below. Whilst all should be considered, some are requirements (refer to ISO 14001 Section 4.2) to be included in the Policy when aiming for ISO14001 certification.

The following issues could be considered for inclusion in an Environmental Policy:

- liquid waste minimisation - reduction, recycling, reuse of liquid wastes;

- solid waste minimisation - reduction, recycling, reuse of solid wastes;
- consumption of raw materials and natural resources – water, materials, fuels, energy;
- generation of pollutant discharges - reduce or eliminate;
- purchasing - identify impacts of purchased products;
- planning and development - minimise adverse impacts of expansion;
- ecologically sustainable development;
- regulatory compliance and compliance with other requirements including customer specifications.
- performance evaluation criteria and procedures;
- education and training;
- emergency procedures;
- technology transfer - seek out better methods; and
- community communication/relations.

A Successful Environmental Policy is likely to

- ✓ be developed, actively supported and implemented by the Board of Directors (if one exists), the General Manager and the Division Managers;
- ✓ be formatted usually to fit on one piece of A4 paper;
- ✓ be dated and signed by the Chief Executive Officer or the equivalent on site;
- ✓ **NOT** commit the Company to objectives or actions which the Company is not reasonably able to achieve or which require resources that cannot or will not be made available. Over commitment will result in loss of credibility with employees, customers and external interested parties;
- ✓ be consistent with existing Corporate Policies, such as the Quality Policy;
- ✓ include a clear statement of intent to comply with all applicable legislative and regulatory requirements and with external and internal standards and codes of practice adopted by the company from time to time;
- ✓ Commit the Company to provide the resources necessary to achieve the stated objective/s. Such resources may be human, financial, or physical; and
- ✓ be made available for public distribution. It could be included in each annual report or the organisation's website and copies made available to customers and to the public on request. It should be provided to suppliers as a demonstration of the Company approach to management of environmental issues.

3.2 Developing Your Policy

3.2.1 The Minimum Requirements for your Policy

✓ ATTACHMENT A - EXAMPLE ENVIRONMENTAL POLICY

In developing your environmental Policy the minimum requirements can be split into four categories:

1. That the Policy is appropriate for activities carried out at the site;

The Policy needs to incorporate all activities and operations undertaken by the Company at the site for which the Environmental Management System is to be developed. This is so that the Policy is representative of the industry and company for which the Policy has been developed. For example, if the site has irrigation of effluent or contains a farm area then the Policy may need to cover aspects related to these operations. Similarly, the transport of cattle to and from the site should be considered for inclusion in the policy.

2. That the Policy contains specific commitments;

ISO14001 requires a number of specific commitments to be included in the policy. These include:

- A commitment relating to continual improvement of the system and environmental performance required to be included in the Policy. This commitment implies an understanding of methods that could and will be used in the future to improve the environmental performance of the site and reduce pollution from the site.
- A commitment needs to be stated for meeting all relevant environmental legislation, codes and industry body requirements and other voluntary agreements.
- A commitment to the prevention of pollution should also be included in the Policy.
- Provision of a framework for setting and reviewing environmental objectives and targets. Options for this are:
  - to state that there will be a formal management system for setting and maintaining environmental objectives;
  - stating the method to be used for setting objectives and targets; and
  - stating that environmental improvement goals will be developed as part of the Environmental Management System.

3. That the Policy is documented and communicated to all employees and available to the public;

The Policy needs to be communicated to all employees and be available to the public. Methods to communicate the Policy to employees include:

- verbally communicating the detail of the policy to employees;
- handing or sending the Policy out to all employees; and
- displaying the Policy in sufficient communal and pedestrian traffic areas in Company facilities so as to ensure that all employees are exposed to it on a regular basis. Areas may include administration, workshops and/or lunchrooms.

The policy can be made available to the public by displaying the policy in public foyers, including in the company annual report and/or making it available on request when the public calls in.

4. That the Policy is implemented and is reviewed for its appropriateness

The rest of the Environmental Management System should provide evidence that the Policy is being implemented. The management review function should ensure that the Policy continues to be appropriate for the organisation.

4.1 Understanding your obligations

Section 4.3.2 of the ISO14001 Standard requires that "*The organization shall establish and maintain a procedure to identify and have access to legal and other requirements to which the organisation subscribes, that are applicable to the environmental aspects of its activities, products or services.*"

In order to design and develop any Environmental Management System, the performance requirements of the system need to be determined in the first instance. Is the Environmental Management System to meet a local council requirement, or is it to satisfy the board that compliance and due diligence requirements are being met? Is the Environmental Management System to provide for Cleaner Production initiatives and reduction of costs? Before further development of the Environmental Management System these questions need to be answered.

The minimum goal for any Environmental Management System is compliance with relevant environmental legislation. This section assesses ways to identify the requirements of the relevant legislation, and suggests procedures that could be implemented to obtain this information and make it available and readily digestible for employees.

You must be able to demonstrate that all requirements relevant to your site such as legislation, standards, codes and authorities are identified, accessible and communicated to relevant employees.

The steps considered necessary to address the legal and other requirements are detailed in the following subsections.

4.1.1 Development of a procedure for identifying legal and other requirements

✓ ATTACHMENT B EXAMPLE LEGAL AND OTHER REQUIREMENTS PROCEDURE

The procedure should detail how relevant legislation, standards and codes of practices are identified and maintained. Requirements relevant to the feedlot industry are likely to originate from:

- Environmental Legislation, including State and Federal Acts, and Regulations;
- Local Council Requirements;
- Licences and Permits;
- Standards and Codes of Practice; and
- Industry Standards.

You need to develop a method for identifying these requirements, and to then keep them up to date.

A useful preliminary source of information on environmental legislation is "The Primary Producers' Legal Guide' (Queensland Law Society 2001). This text covers relevant environmental legislation and has summaries of the legislation, and details how the legislation is relevant to primary producers. While the legal guide provides a good starting point with respect to legislation, it is important to make sure that you are aware of the most recent legislation, and any changes that have occurred since 2001.

Other sources of legislative information include subscriptions from legal publication companies who publish Environmental Legislation and send updates out as new laws (Acts) are gazetted. In addition, the State Government will generally have a website with the latest legislation for that state.

Licences and permits will be issued and enforced through local or state authorities, so correspondence with these organisations is required to keep up to date on their requirements.

Industry Standards are variable and can be obtained through Industry affiliations and other related bodies. The Australian Standards often specify the requirements relating to a particular activity.

Legal Register

✓ **ATTACHMENT C EXAMPLE LEGAL AND OTHER REQUIREMENTS REGISTER**

Once responsibilities have been assigned, with legislative requirements and standards identified, the next step is to develop and implement a process to list your site specific and general requirements for the site in a legal register:

The legal register will:

- Detail legal and other requirements relating to the site;
- Provide a quick reference to specific environmental requirements for the site;
- have requirements written in a plain language;
- identify the location of each requirement on site i.e. Whether it is a hyperlink to legislation on the internet or located in the site files; and
- detail the person responsible for maintaining and updating the register.

The register should include all legal and other requirements discussed below.

General Environmental Legislation

General Legislative requirements need to be identified for the site. The register will specify environmental laws and regulations that apply to the site, and the specific requirements for the site under the legislation, including licence and permit requirements.

In this register, the "person responsible" must identify changes of any particular Act or Code and ensures that the consequences of the changes are communicated and understood by people within the organisation and where appropriate the register kept up to date.

Licences and Permits

For the majority of feedlot facilities, specific site requirements will be detailed in some form of licence, permit, consent condition or other regulatory tool. These may have discharge limits, concentration limits, requirements for monitoring etc. In addition, regulatory authorities may have also developed policy and guidelines. It is important that these requirements are known and understood by relevant site personnel.

The site specific requirements would be included in the legal register and would need to be based on the licences and permits, but written in a user friendly way for site employees to be able to understand easily. The register also needs to be updated on a regular basis to incorporate changes to the licences.

Standards and Codes of Practice

Standards and Codes of Practice relevant to your operations need to be included as part of the legal requirements. Examples of Standards and Codes that may be retained at each location are the Australian Standard AS 1940: The storage and Handling of Flammable and Combustible Liquids; AS 1596 Storage and Handling of LP Gas, and the Australian Dangerous Goods Code.

There are other requirements that you may incorporate into your Environmental Management System. These could include:

- Voluntary agreements
- Corporate Requirements; and
- Industry Benchmarks.

Voluntary Agreements

If your facility has signed onto particular voluntary agreements such as the Federal Government's Greenhouse Challenge program, the facilities commitment under these agreements needs to be managed.

Corporate Requirements

If your facility is part of a larger company with corporate management, there may exist a number of company initiatives, standards, guidelines, codes of practice and policies that could have specific requirements that need to be incorporated into your Environmental Management System. In defining the design of your management system, you should identify and incorporate these requirements and included them in the legal register.

4.2 Identifying Environmental Risks and Potential Benefits

Section 4.3.1 of ISO14001 states that "The organisation shall establish and maintain (a) procedure(s) to identify the environmental aspects of its activities, products or services that it can control and over which it can be expected to have an influence, in order to determine those which have or can have significant impacts on the environment. The organisation shall ensure that the aspects related to these significant impacts are considered in setting its environmental objectives.

The organisation shall keep this information up-to-date."

The identification of environmental risks is one of the most fundamental parts of an Environmental Management System. The environmental issues facing an operation must be identified and must then be managed so that, at a minimum, the most serious of the issues are controlled. It is likely that most of the 'significant' environmental issues will be associated with either achieving or maintaining legal compliance.

In addition to managing the environmental issues it will be important to be able to show that all reasonable steps are being taken to prevent environmental harm.

The identification of environmental risks should be a dynamic part of the Environmental Management System. The risk assessment should be reviewed and revised at least annually and whenever any of the following occur:

- New processes are started on site especially if covered by planning or permitting stipulations;
- Land use changes occur;
- Changes in legislation occur; and/or
- Any other changes which might affect the environmental standing of the company.

4.2.1 Development of a Procedure for the Identification of Environmental Risks

✓ ATTACHMENT D EXAMPLE ENVIRONMENTAL RISK ASSESSMENT PROCEDURE

It is recommended that a procedure be developed (detailing who is responsible, what has to be done and how and when it will be done) for compiling the tables on identification of environmental risks and the subsequent control strategies. The procedure should also address the need to identify environmental benefits of the operation, in particular, where further management of the environmental benefit will lead to greater economic gains or further improvement to environmental conditions on the site.

When developing the procedure it is important to include provision for using the risk assessment method to evaluate proposed changes to the site as part of the planning process. The addition of this risk

assessment will hopefully save a great deal of trouble in later stages of the construction and operation of the new facilities.

The identification of what needs to be managed, i.e. significant environmental risks, is a fundamental part of management systems. Therefore an Environmental Management System must start with a systematic identification of environmental issues assessing their consequences and their likelihood and determining which of these issues pose significant risks.

There are many ways of identifying environmental risks. This guide will assist you in taking an appropriate path to identify the environmental risks faced by your feedlot operation.

It is important to remember that the risk assessment needed to develop your EMS is a high level one that allows you to objectively assess the relative importance of all of your environmental issues. There is no need to conduct a detailed risk assessment of each piece of equipment. Reference to the examples provided should help you decide the level you need to pitch the risk assessment.

Having read the introduction to environmental risk assessment, you may well be asking, "How do I decide what my environmental issues are? What kind of consequences should I be considering and how do I distinguish between major and minor issues and consequences of these issues." Then once you have done this you may ask how to combine the concepts of consequence and likelihood to come up with significant environmental risks. The rest of this section helps you answer these questions but it should be remembered it is your environmental system so the relative importance of the environmental risks identified is up to you – this guide will help you to rank the issues you identify.

Assemble a Knowledgeable Team

The first step in identifying your environmental risks is to assemble a knowledgeable team. At first glance you may feel that you do not have the necessary environmental expertise on site. By looking a little closer you will find that there are a number of individuals on site that can provide invaluable ideas to the process of identifying environmental risks.

These people are likely to include:

- Senior management;
- Operational personnel;
- Safety personnel;
- Maintenance personnel;
- Quality system personnel; and
- External Parties.

Senior management will know about director liability and due diligence. They are also likely to have been involved with complaints or problems with the regulatory bodies.

The operational personnel will know about issues such as stormwater control, effluent treatment problems, waste disposal facilities and issues, odour, irrigation, etc.

Safety professionals will know where different chemicals and other hazardous substances are used or stored. They may also have experience with the process of identifying hazards.

Personnel involved with quality systems may be familiar with the operations sufficiently to provide invaluable information regarding the development of process flow diagrams or procedures, control points, operating parameters etc. and how existing systems work in the company culture. This is very important although it should be remembered that the Environmental Management System has different goals from the quality management systems and will require different emphasis. Do not be afraid to change the way the quality management systems work but learn from the lessons that would have been learnt during their implementation.

Do not exclude anyone who feels they can provide valuable input to the process – you never know they may have had an interest in environmental issues and gained useful knowledge over the years.

You may wish to involve external parties such as pollution control officers from the local council, the State agricultural officer (or equivalent), the local EPA officer (or equivalent in your state) and/or consultants. If you communicate with regulatory authorities, be careful that you are not exposing yourself to the outside world too early in the process and that you are not going to cause yourself a lot of extra trouble.

Describe the Processes

The second step in identifying environmental risks is to describe the operations conducted on site so that everyone who is going to be involved in the identification of issues can be clear of what process is being discussed at any one time. In addition, it is important to describe the processes so that the whole operation defined within the scope of the Environmental Management System has been considered for associated environmental issues.

The description of the process must include all the waste disposal operations and all the transport operations included within the scope of your Environmental Management System. This could include irrigation and effluent treatment operations, past site usage that could have resulted in contamination of the ground and livestock transport to and from the site. Effectively the assessment should consider all inputs and outputs from all processes within the scope of the Environmental Management System.

The process description could be documented in the form of flow diagrams or as written descriptions. Flow diagrams are a good format for the process description, as the graphical format will assist in focussing the mind when trying to identify issues. The process flow diagrams should include the inputs and outputs from each process and the site overall.

Environmental Process Flow Diagrams could be developed to identify all the steps taken from livestock delivery through to livestock transport from the site including waste streams produced along the way.

The actual extent of the process flow diagrams will be dependent on the scope of your Environmental Management System. However, it is important to consider the following issues:

- "static" processes e.g. storage of fuel or electric transformers;
- physical aspects of the site, e.g. stormwater drainage and collection systems and building materials;
- processes or activities carried out by outsiders on the site, e.g. unloading of chemicals, filling of diesel tanks or transport of livestock to and from the site; and
- non-routine processes such as maintenance.

Verification of the process flow diagrams should be conducted by walking through the facilities in question and checking that all the features of that process have been included.

Provision should be made in the procedures to ensure that when processes change that the identification of environmental issues documented in the process flow diagrams is reviewed and revised as appropriate. Any changes made to the process should be included in a re-evaluation of the risk assessment and the prioritised list of risks.

✓ ATTACHMENT E OVERALL PROCESS FLOW DIAGRAM FOR THE BRISBANE VALLEY FEEDLOT

Identification of Environmental Issues

During the course of developing the process flow diagrams, it is likely that the group will also identify the environmental issues associated with the site. Many of the environmental issues facing the site will be those associated with the traditional view of pollution. The issues are likely to include:

- Discharges to surface water;
- Discharges to ground water;
- Nuisance to neighbours;
- Disposal to land;
- Raw material usage (intermediate products and utilities such as water and energy); and
- Emissions to air;

It is also likely that there are other environmental issues. These may include:

- Sustainable soil management;

- Land management and pasture improvement;
- Noxious weeds;
- Native flora and fauna habitats;
- Heritage;
- Transportation; and
- Efficient use of resources.

The above list is not meant to be exhaustive and you will need to consider your own issues. It may be useful to break these issues down further, for example, discharges to surface water could be broken down into:

- Discharges from the stormwater system; and
- Discharges from the effluent treatment plant/ponds.

The importance of defining the scope of the Environmental Management System is critical in deciding what issues should be considered. An Environmental Management System focussing purely on compliance may not consider use of resources. Similarly, such an Environmental Management System may not focus on some environmental issues that are clearly linked to the financial performance of the site. Broadening the scope of the Environmental Management System does allow it to be a vehicle for better environmental and business performance.

Linking Environmental Issues to Site Processes

The next step in identifying environmental risk is linking the processes identified above with the issues. The first step is to link the normal operations of the plant to the issues; for example;

Emissions to air → effluent treatment ponds (odour)

→ traffic (dust)

Sustainable soil management → effluent irrigation

→ crop rotation

It is also important to consider non-routine activities associated with the processes or events and how they may interact, e.g. maintenance, start-up, shutdown, wash-down and equipment malfunction.

It is also important to consider "unlikely" or a "rare" event e.g. spills, leaks, severe storms, drought and bushfires. You may think that some of these you do not have control over and for natural events such as droughts and storms you do not. However, you can still manage the environmental consequences associated with these events. You may see spills and leaks as "accidents". It is important to remember accidents do not just happen. They are a result of avoidable and manageable circumstances. During the

initial assessment of environmental risks it is likely that certain processes will be grouped together, e.g. all areas on the site used for clean storage can be grouped together when considering spills.

Finally, environmental issues may be a result of past activities by either the existing company, or by previous occupiers. These environmental issues usually relate to the potential for past disposal to land, which may have led to soil and/or ground water contamination.

Consequences Associated with Environmental Risks

The term consequence can be viewed from a compliance/regulatory consideration, e.g. non-compliance, a notice to act, court case, fines or jail of directors. The consequences can also be considered with respect to the impact on the surrounding environment, e.g. short-term local negative impact, catastrophic impact on endangered species or long term, global impact issues. AS/NZS4360:1995 *Risk Management* can be used to identify a risk assessment process.

The consequences can also be considered in terms of community perception, e.g. does it result in a bad relationship with neighbours or significant negative press at a local, state or national level.

Finally, consequences can be seen from a business financial perspective and can be expressed in terms of loss of revenue.

Whether you consider one or some or all of the consequence considerations described above, or you use others, is up to you. It needs to be remembered that if your environmental policy makes commitments with respect to certain performances, then you will need to consider it in the consequence assessment.

When assessing the consequences it is not necessary to go into great detail. It is helpful to bracket the consequence into one defined consequence criteria, e.g. high, medium or low consequence.

Consequence Categories and Criteria

The consequence criteria established for your operations should reflect the overall objectives of your management system. It is these criteria that are going to determine the focus of your Environmental Management System. It is therefore worth taking the time and making the effort to ensure they are appropriate and will meet the overall objectives of your company. The criteria will be an important part of your system. This should be done after obligations are understood (Section 4.2).

The following provides some example consequence criteria that could be used to categorise the risks into high, medium and low.

High:

H1: incident resulting in the serving of a prohibition notice

H2: business interruption;

H3: the potential to cause a high level of impact at a local level; and

H4: a cost of over $25000 for disposal/usage in any year.

Medium:

M1: continuous emission/discharge in excess of authorised limits resulting in an enforcement notice or fineable offence;

M2: incident resulting in a clean up operation or fineable offence;

M3: a cost of between $15000 and $25000 for disposal/usage in any year;

M4: discharge with potential to impact local watercourses;

M5: potential to cause medium level of impact at a local level; and

M6: complaints from neighbours.

Low:

L1: incident with minor on-site clean-up i.e. potential for groundwater/soil contamination;

L2: incident resulting in a complaint e.g. from the local community;

L3: a cost of less than $15000 for disposal/usage in any year; and

L4: could cause public concern.

The number of categories of consequence criteria is up to you. You may decide that considering five consequence criteria is more applicable to your facility although three will probably suffice. By using the H1-H4, M1-M6 and L1-L4 type numbering system you will be able to enter the relevant criteria into the risk assessment table and hence track your rationale for allocation in the future. This may seem trivial now but it could save you a great deal of effort when you review the system and the risk assessment in the future.

Likelihood Criteria

The other consideration in environmental risk is likelihood, that is, how likely the identified issue may occur. For example, routine activities may happen once per day, maintenance once per week, major storms once per year, drought once every 10 years and a major spill every one hundred years. The following provides some example likelihood criteria. When you are assessing the likelihood of accidents and other loss producing events you should assess the probability that the event can occur given an operating scenario and the frequency at which that operating scenario occurs on site. AS/NZS4360:1995 *Risk Management* can be used to identify a risk assessment process.

High:

- event that could or does occur once per week;

Medium:

- event that could or does occur once per month; and

Low:

- event that could or does occur once per year.

Again, the exact number of criteria is up to you and your organisation.

The following table could be used to record the consequence and likelihood criteria for your assessment of environmental risk.

Table 3
Record of Consequence and Likelihood Criteria

	Consequence Criteria	Likelihood Criteria
High		
Medium		
Low		

Assessment of Significance

The next step is to combine the consequence and likelihood criteria that you have assigned to each environmental issue to determine whether it is a significant environmental risk.

The following table could be used to assess significance.

Table 4

Significance Assessment Table

Likelihood Level	Consequence Level		
	High	**Medium**	**Low**
High	Significance 1	Significance 2	Significance 5
Medium	Significance 2	Significance 4	Significance 6
Low	Significance 3	Significance 5	Significance 7

Significance: 1 = High priority 2-4 = Medium-high priority 5-7 = Medium priority

It should be noted that you need to decide the levels of significance and that you should allocate the significance weighting in a way that is appropriate for your site. As a minimum it is thought that in the above risk assessment table the issues falling into the risk category levels 'Significance 1' and 'Significance 2' should be identified as 'Significant' using the terminology of ISO14001.

The risks should be identified by thinking about each operation as existing in the following four distinct phases:

- Normal- a desired, everyday, controlled activity;
- Abnormal- a desired, low frequency, controlled activity;
- Accidental - a non desired, infrequent, uncontrolled activity; and
- Those operations that occurred in the past that could result in environmental impact.

The significance assessment process should be documented for future reference and revision. An example proforma is provided in Table 5 for recording the findings of your significance assessment.

Once the consequence and likelihood of each scenario has been identified the Table 3 should be used to assess the overall significance of the risk. Where the cut off point for significance is drawn is up to you. It is however recommended that a reasonable number of 'significant issues' be identified. It is thought that 20 to 30 significant issues and risks will be appropriate for a first evaluation at a meat-processing site.

The emphasis of the environmental risk assessment process should be on the identification of events and scenarios that are reasonably likely to cause unacceptable loss in the eyes of the company, regulators, customers, employees and other important stakeholders.

Table 5

Environmental Risk Significance Assessment Form

Activity	Sub-activity	Aspect	Impact	Consequence	Likelihood	Significance
Cattle Transport	Truck Movements	Manure spillage	Nuisance to neighbours along the transport route, affects company reputation, soil contamination, stormwater contamination	Medium	Medium	Significance 4

4.3 Objectives and targets and Environmental Management Programmes

Section 4.3.3. of ISO14001 states that "The organisation shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organisation.

When establishing and reviewing its objectives, an organisation shall consider the legal and other requirements, its significant environmental aspects, its technological options and its financial, operational and business requirements, and the view of interested parties.

The objectives and targets shall be consistent with the environmental policy, including the commitment to prevention of pollution."

Section 4.3.4 of ISO 14001 states that "The organisation shall establish and maintain (a) programme(s) for achieving its objectives and targets. It shall include:

(a) designation of responsibility for achieving objectives and targets at each relevant function and level of the organisation;

(b) the means and time frame by which they are to be achieved.

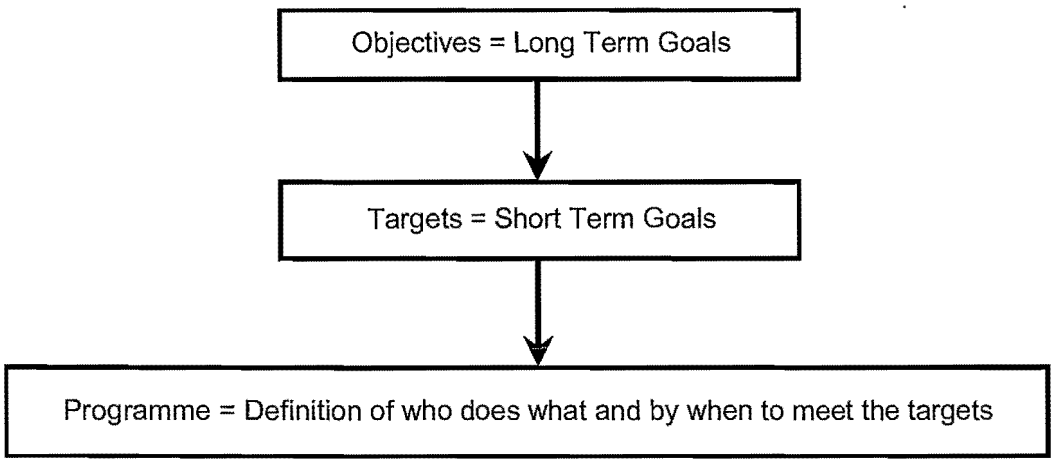
If a project relates to new developments and new or modified activities, products or services, programme(s) shall be amended where relevant to ensure that environmental management applies to such projects."

One of the key goals of an Environmental Management System is to allow and provide a structured process for continual improvement, the rate and extent of which will be determined by you in view of your site specific needs and issues.

To this end you should develop a process as part of your Environmental Management System, which will manage the extent to which the site improves its environmental performance. This improvement will be different for each site depending on the issues facing the site and the pressures it is under with regard to environmental interests.

As a minimum the Environmental Management System should incorporate basic project management principles in that end goals are defined, milestones to achieve the final results are identified and the actions necessary to reach the milestones are communicated to the relevant employees.

The following hierarchy should be applied to the setting of your improvement goals:



Implementing an Environmental Management System and/or any significant operational changes to meet environmental requirements will often require substantial investment of both time and money. This investment should be planned. If you do not already have a system for recording goals and allocating resources (both personnel and capital) then the following proforma (Table 6) may assist you to document the goals and actions. You may even find it a useful way of recording environmental planning information and keep it recorded separately to other business planning activities although the links should be apparent to you. Objectives should generally relate to the significant issues raised in Table 5. If an issue raised in Table 5 cannot be managed through control procedures, then objectives and targets may need to be identified to manage this significant issue.

Other potential sources for environmental objectives include:

- The environmental policy;
- Issues associated with implementing the system; and
- Issues associated with the organisations legal and other requirements (see section 4.2).

The number of targets needed to meet an objective is up to you. The more you break down the long term or large goals, the easier it will be to manage the implementation of the necessary actions.

The other important part of setting objectives and targets is to ensure that they are assigned to the relevant personnel within the facility and that the environmental manager does not get assigned as the responsible person for all of the environmental objectives and targets.

Also, for each target, a number of actions may be required. These actions can be broken down to the detail of specifying the action as required. The following example may be useful in understanding the difference between objectives, targets and actions that will be included in Environmental Improvement Plans (Table 6):

Table 6

Objectives, Targets and Actions

Objective	Priority/ Source	Targets	Action	Responsible Person	Deadline	Estimated Cost ($)
Reduce Stormwater Contamination	High Reference Table 5	1. Contain stormwater runoff from feedlotting area and treat	A) Install sedimentation pond system.			
			B) Irrigate treated effluent on site.			
		2. Contain leaks from the fuel store	A) Conduct regular (yearly) integrity inspections of all tanks			
			B) Install bunding around the fuel store			
		3. Reduce suspended solids from entering receiving waters	A) Revegetate disturbed soil areas to reduce sediment movement			
			B) Install grass swales upstream of receiving waters to capture suspended sediment.			

If used and diligently managed, the above system can be a powerful project management tool both for the development and implementation of your Environmental Management System and for longer-term management of environmental activities on the site.

When deciding what goals you should set for your Environmental Management System it will be of much use if you follow the age-old guidance of SMART objective setting.

SMART objective setting involves:

- Specific;
- Measurable;
- Achievable;
- Realistic; and
- Traceable.

A typical objective a company may set is 'To reduce waste'. If the SMART principle were applied to this goal the following changes would occur:

Make the objective specific:

What type of waste are you going to target? The more specific you can be the more likely you are to have a successful outcome both in terms of achieving the goal at the end of the day but also ensuring staff understand what they have to do

Make the objective measurable:

How much are you going to reduce the production of the specific type of waste by and against what benchmark and against what criteria? Is it feasible to measure these criteria – do you need to rethink the units?

Make the objective achievable:

This is taken to mean achievable within the confines of your operation i.e. the financial and operating constraints you may have as a business in a competitive market.

Make the objective realistic:

This is taken to mean ensuring that it is technically feasible for the goal to be met. For example, a goal of zero waste may not be technically impossible.

Make the objective traceable:

It is important in setting objectives and targets that the overall goals are traceable throughout the company. For example a goal of reducing paper waste may well affect several departments; the targets for each department should reflect the overall objective for the company.

Therefore, a SMART objective may be to:

'Reduce the phosphate loading in effluent discharged as irrigation water to Xmg/L per head of throughput by the year 2000'

Or

'Reduce the phosphate loading in effluent discharged as irrigation water by 35% by the year 2000 based on 1990 levels'

5.1 Establishing Roles and Responsibilities

5.1.1 Defining responsibility for environmental management

In terms of structure and responsibility, the ISO 14001 standard requires that *"Roles, responsibilities and authorities shall be defined, documented and communicated in order to facilitate effective environmental management.*

Management shall provide resources essential to the implementation and control of the environmental management system. Resources include human resources and specialised skills, technology and financial resources.

The organisation's top management shall appoint (a) specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibilities and authority for:

a) ensuring that the environmental management system requirements are established, implemented and maintained in accordance with this International Standard;

b) reporting on the performance of the environmental management system to top management for review and as a basis for improvement of the environmental management system."

Nominating an Environmental Representative

In order to meet the above requirements a representative will need to be chosen to manage the process of implementing and maintaining the environmental management system.

There are some key considerations in the decision of choosing an appropriate environmental management representative. These include:

- the representative must have sufficient authority from top management to provide resources required in the Environmental Management System and have the backing of management in implementing all parts of the Environmental Management System;
- the role of the Environmental Representative is agreed; and
- the Environmental Representative has responsibilities defined and which are in accordance with his/her authority.

General Roles and Responsibilities

In addition to having a specific person nominated as the Environmental Management Representative it is also considered important that general environmental roles and responsibilities be assigned to all employees at site to encourage ownership of the system. Management structures will vary from site to

site, with different roles and responsibilities identified for each person. In this section, overall roles have been assumed for the different levels of management at feedlots. These have been nominated as:

- General Manager;
- Operations Managers;
- Employees with environmental control related tasks;
- General Employees; and
- The Environmental Management Representative.

While it is acknowledged that this structure will not be completely similar to the management structure at most sites, it does provide a basis for comparison.

The details of the general roles within feedlots and specific employee requirements are detailed in Table 8.

Table 8

Roles and Responsibilities in Environmental Management

Level of Management	Roles	Specific Employee Requirements for Environmental Management
General Manager or Managing Director	• Responsible for effective management of environmental issues and for the Implementation of the Environmental Policy; • Delegates authority to implement the Environmental Management System to the Environmental Management Representative; • Make available resources essential to the implementation and control of the management system. These resources include human resources and specialised skills, technology and financial resources; • approves Environmental Policy.	Commitment to the Environmental Management System process. Understanding of liabilities associated with environmental impacts. Understanding of the legal implications of breaches (both corporate and individual liability).
Environmental Management Representative	• Ensuring the Environmental Management requirements are established, implemented and maintained in accordance with ISO14001; • Responsible for the day to day management of the Environmental Management System; • Designation and delegation of responsibilities for developing procedures relating to Environmental Management to other personnel; • Reporting on the performance of Environmental Management System to top management for review and continued improvement; • Making sure managers and supervisors have the knowledge to fulfill their responsibilities	Awareness of the organisation's significant environmental issues and why they are deemed significant. Understanding of techniques that might be applicable in controlling these issues. Knowledge of trends in the development of significance, eg. legislation, community expectations, and their relevance to business development. Understanding of techniques to communicate and set the agenda for environmental issues within the organisation. The identification of opportunities for improvement. Knowledge of relevant techniques for environmental management as defined by industry codes and

Level of Management	Roles	Specific Employee Requirements for Environmental Management
	e.g. train the trainer programs; • Identifying compliance requirements	affiliations. Knowledge of designing and implementing Environmental Management Systems. Understanding of the legal implications of breaches (both corporate and individual liability).
Operations Managers	• Responsible for effective implementation of the procedures for Environmental Management within their overall areas of operation (or as required by the Environmental Management Representative); • Accountable for employees working under them; • Ensuring personnel in their area are aware of environmental management system procedures and work instructions; • Identifying the resources that they require and justifying those requirements to senior management; • Ensure the commitments in the Environmental Policy are maintained; • Ensuring employees of the Manager's area are made aware of procedures, Environmental Critical Control Points and other aspects that relate to the Environmental Management; • Specific responsibilities are to be identified and formally assigned.	Understands which environmental issues affect the business. Understands legal implications of breaches (both corporate and individual liability). Has knowledge of how to incorporate environmental considerations into business planning and decision-making. The identification of opportunities for improvement. An understanding of liabilities associated with environmental impacts. An understanding of the significant environmental effects of the activities they manage, the reason these aspects are significant and the available means for controlling these effects. The roles of individuals they manage in ensuring environmental protection and the skills these individuals require to be effective in these roles. An understanding of the environmental significance of decisions they make. An understanding of the Environmental Management System and their roles and responsibilities.
Employees with specific environmentally related tasks	• Undertaking their work as described in the Environmental Management System procedures and Standard Operating procedures; • Reporting Non-Conformances; • Responsible for environmental performance within the scope of their activities; • Identify areas for improvement; • Showing initiatives in Environmental Management	Knowledge of what is required in normal and abnormal operating conditions and why. Understanding of the importance to the organisation and environment of any failure to undertake their tasks properly. The legal implications of breaches (both corporate and individual liability) Understanding of how their tasks fit into the wider activities of the organisation, its policy and objectives. An understanding of their responsibilities with respect to Environmental Management. The identification of opportunities for improvement.
General Workforce	• Undertaking their work as described in the Environmental Management System procedures and Standard Operating procedures; • Reporting Non-Conformances; • Responsible for environmental performance within the scope of their activities.	An understanding of how processes performed by the operator can impact the environment. Knowledge of steps they can take to minimise these impacts. The legal implications of breaches (both corporate and individual liability). An understanding of responsibilities within the

Level of Management	Roles	Specific Employee Requirements for Environmental Management
		Environmental Management System. The identification of opportunities for improvement. An understanding of relevant procedures detailed in the Environmental Management procedures.

Recording and Communicating Responsibilities

Roles and responsibilities need to be documented and communicated to relevant employees so that there is understanding amongst managers and employees of what is expected of them and what is expected of fellow employees. In addition, documented responsibilities allow for new employees or third parties to quickly understand the roles of employees in the Environmental Management System, and provides a record that assists in the demonstration of due diligence.

In order to define environmental responsibilities within your management structure, a useful tool is an organisational chart that states what the environmental roles are according to the existing company structure. This can be used to ensure that those with environmental management responsibilities have the authority to carry out their roles.

There are a number of ways to document and communicate responsibilities. These include:

- Job descriptions;
- Key Performance Indicators (KPI's);
- Procedures; and
- Matrices.

Job Descriptions

Job descriptions are a common way to define the responsibilities of an employee that holds a particular position. They would normally describe job-related activities such as expected work requirements and specific job tasks. In the same way as for most task related work, requirements and roles with respect to environmental management could also be integrated into these position descriptions.

Key Performance Indicators

Responsibilities may be written in terms of achieving set performance targets. These may be stated in job descriptions.

Procedures

A number of procedures will be required to be developed as part of any Environmental Management System. These procedures should contain roles for those responsible for any part of the procedure. The

procedures as set out in Section 5.5: Operational Control and Monitoring Procedures details these requirements.

Matrices

Matrices can be used to describe employee responsibilities in a summary form for quick reference.

5.1.2 Internal Communication and Reporting

Section 4.4.3 of ISO14001 states that "With regard to its environmental aspects and environmental management system, the organisation shall establish and maintain procedures for internal communication between the various levels and functions of the organisation."

Once the decision has been made to develop a system to manage environmental issues, methods of communicating the system and its details to employees at the facility need to be established.

Initial Awareness Training of the System

The Initial Awareness Training of the System is the first likely step in communicating the company's commitment to environmental management and the system for managing its environmental issues. In order to have a successful launch the system needs to be communicated effectively to all employees with high level management support indicated. This can also be considered environmental awareness training. A suggested method for this includes:

- The General Manager to hold a workshop with senior personnel to notify them of:
  - the system;
  - the importance of the policy;
  - the reasons for implementing the management system;
  - the environmental management representative given the responsibility for the system;
  - the planned method of development of the system; and
  - a timeframe for implementation of the system.
- Conducting workshops for employees. The workshops could be given by the General Manager, Operations Manager, or Environmental Representative and cover similar aspects as detailed above, although they should be presented in a way that is appropriate to the employees needs.

This issue of awareness training is also dealt with in Section 5.2: Environmental Training.

Ongoing Communication and reporting

The internal communication and reporting of specific elements of any system for environmental management is crucial to the ongoing success of environmental management at the facility. This communication needs to address all employees at the facility who have environmental tasks or undertake tasks that have been identified to be associated with significant impacts. This includes the tasks required in Section 4.1: Identifying Environmental Risks.

Typically, communications for environmental management at your facility should involve the following personnel:

- General Managers;
- Operations Managers;
- Employees tasks related to significant environmental issues;
- The Environmental Representative; and
- General Employees.

You may already have established means of communicating to personnel in your organisation. As part of developing your communication procedure, you should examine your existing communication forum for their effectiveness for communicating both upwards and downwards on environmental issues. Once you have evaluated this you may identify areas where existing communication forums can be used for environmental communication and areas where new forums need to be created. Detailed below are some methods you may want to consider to effectively communicate internally.

- **Team Meetings** Many companies implementing environmental management strategies initiate the formation of a central group to provide a focus for decision making on environmental issues for the facility. This group is often called an environmental team or an environmental committee.

  It is important that the team contains people with management authority, and as such it follows that the team would comprise management and others with key environmental management responsibilities. The team may even be formed from an existing management team. The team would typically meet on a monthly basis and discuss any issues relating to environmental management that have arisen. The meeting may comprise part of existing business or other management type meetings.

  Minutes of the meetings are generally developed and can be written up and put in public areas for all personnel to have access to them.

- **Performance Evaluation** Most companies have some sort of performance evaluation of employees, with criteria specific to the tasks required of the person. Environmental performance indicators can be bought into the criteria for all personnel, with environmental criteria being related to responsibilities for environmental management.

- **Training** Training is an effective way to communicate many aspects of environmental control to all levels of employees. Discussion of training requirements is detailed in Section 8.0: Environmental Training.

- **Ideas for Environmental Initiatives and Complaints** It is important that all employees have a means to provide input, either positive or negative, to environmental management. In order that employees feel a comfortable in providing this input, a forum for all employees to report on environmental management at the facility should be developed. This could cover:

  - Suggestions for improvements in environmental management and systems management;
  - Environmental initiatives for the facility or employees;
  - Environmental incidents, complaints and other issues at the facility that need to be developed. (A method for this is discussed in Section 6.1: Reporting and Solving Problems)
  - The appropriate forum may be monthly, quarterly or weekly meetings and may be coupled with Quality or OH&S Meetings.

- **Environmental Coordination** Communications systems between the Environmental Management Committee (if one is developed, which normally comprises managers and others with environmental management responsibilities) environmental coordinator, senior management and employees is required in order that information relating to the environment management can be distributed effectively amongst the facility. Methods for this includes company newsletters, notice boards, information sheets and the like. As a minimum, methods of communication between the following personnel should be developed:

  ⇒ General Management to all personnel;

  ⇒ The Environmental Manager to the General Manager;

  ⇒ The Environment Manager to all personnel; and

  ⇒ The Environmental Management Committee to all personnel.

- **Corporate Communications** Where the corporate headquarters are located separately from the site, methods to communicate aspects of environmental management at the site to corporate headquarters, and from the headquarters to site, should be set up.

Preparation of Procedure

✓ ATTACHMENT F EXAMPLE ENVIRONMENTAL COMMUNICATIONS PROCEDURE

Once you have identified the key internal communication forums within the organisation for environmental management you should then consider the value in documenting this procedure. The need for a documented procedure should be considered on site by site basis depending on the perceived value of a documented procedure.

5.1.3 External Communication

The ISO14001 Standard requires that "With regard to its environmental aspects and environmental management system, the organization shall establish and maintain procedures for receiving, documenting and responding to relevant communication from external interested parties.

The organization shall consider processes for external communication on its significant environmental aspects and record its decision."

This section covers the requirements for communication of any aspect of environmental management to people and organisations external to the facility. Such organisations could include:

- Government authorities such as the State Agricultural Department, the State Environmental Department, Local Councils or Local Water Authorities;
- Environmental Groups such as local concerned residents, community groups or animal rights groups;
- Media reporters;
- Neighbours; and
- Community Groups such as schools, local business communities and progress associations.

This section is split into two sections:

1. proactive reporting, or reporting initiated by the facility; and
2. reactive reporting, such as in the case of an environmental incident.

Proactive Communications

Proactive communication is initiated by the facility, and can be used to raise awareness of the environmental management initiatives at the facility. It has many potential benefits, not the least of which could be the maintenance of a transparent and cooperative relationship with external stakeholders such as neighbours and government enforcing agents.

Examples of proactive communication includes:

- **Environmental Performance Reporting**: Detailing environmental performance in a report generated for the public or any other stakeholder. This reporting is aimed at making business more transparent to the general public. Many companies have developed these reports. Environment Australia recently released 'Triple Bottom Line Reporting in Australia – A Guide to Reporting Against Environmental Indicator' (June 2003).
- **Community Handouts/Newsletters** Communication regarding issues that may impact on neighbours, such as potential odour issues.
- **Reporting to Government Authorities** This includes regular reporting to government authorities outside of regulatory requirements such as stated in licence or permit conditions (discussed further

below). Regular reporting to such authorities may help to engender a more positive relationship with the authorities than maintaining a minimal level of communication.

In addition to the reporting requirements above, consideration should be given to internal assessment of planning, so that while not only the best result for the Regulatory agencies is gained, the facility can incorporate benefits from the lessons learnt at other developments.

Reactive Communication and Handling Complaints

Reactive communication covers responses to requirements of regulatory authorities, Local Council as well as responses to Community Groups, neighbours or anyone from the public. Typical communications include reporting of compliance with licence or permit conditions, response to external complaints, or general environmental issues.

In the case of legal action where it may be important that due diligence can be demonstrated, it may be important that procedures are developed to manage and record these communications effectively.

Examples of external reporting of a reactive nature, where procedures may be required to ensure that effective management and recording of the communications can be demonstrated include:

- reporting monitoring results and other material to demonstrate compliance with site licences;
- responding to complaints from the general public or community groups; and
- responding to questions or issues raised by government authorities.

Procedures for dealing with complaints could be done in conjunction with Section 6.1: Reporting and Solving Problems, which discusses the development of methods to deal with things that go wrong on site. **Table 9** provides a guideline for the minimum issues to be recorded for environmental complaints to satisfy the requirements of ISO 14001.

Table 9

Typical Complaints Log

Date & Time	Person & Contact details	Detail of Complaint	Response	Employee Initials
30/3/99 5:00pm	Mrs. Brown Ph (07) xxxx xxxx	Odour complaint	Irrigation of waste water ceased until the wind stops	DB
2/4/99 3:00pm	David Parker Greenpeace (02) xxxx xxxx	General complaint about our facilities environmental performance	Sent a copy of our environmental policy and asked our environmental representative to call see letter reference xxxx	DB

Communications in a Project Planning Process

There are a number of considerations in a project planning process that should be communicated to relevant authorities, in order that planned developments are designed and constructed in a way that is consistent with the requirements of these authorities.

Many companies have gone through the process of design and construction, only to find that the operation of the structures, plant or equipment did not meet requirements of a government authority. It is important to ensure that all current and likely future requirements of authorities are identified and documented early in the design phase, in order that they can be incorporated with little cost. Retrofitting is normally a much more expensive option.

To prevent this, communications need to be set up between the facility and local authorities for the planning phase of work that may have an associated significant risk or impact. In addition, external contact should be made with suppliers and other users of similar structures or equipment in order that the most suitable is used in all situations. The facility should solicit response from these parties proactively, such that the ultimate design is the best for a given situation.

A checklist of typical project planning actions is given below:

- Identification of environmental issues for the development;
- Noise limits from the State Agricultural Department, Environmental Department or local council;
- Wastewater effluent limits from State Agricultural Department, Environmental Department or local council;
- Dangerous goods storage requirements from WorkCover or equivalent;
- Future development plans by Council for the given area and its surrounds, eg potential for change in landuse around the site that may limit site's operations;
- Stormwater management issues from State Agricultural Department, Environmental Department and/or Council; and
- Initiatives for waste reduction programs required by Council or the State Environmental Department.

Preparation of a Procedure

✓ **ATTACHMENT F EXAMPLE ENVIRONMENTAL COMMUNICATIONS PROCEDURE**

The value in preparing a procedure to cover external communication should be considered on a site-by-site basis.

5.2 Environmental Training

The ISO14001 Standard has defined requirements for training. It states that "The organisation shall identify training needs. It shall require that all personnel, whose work may create significant impact upon the environment, have received appropriate training.

It shall establish and maintain procedures to make its employees or members at each relevant function and level aware of:

a) the importance of conformance with the environmental policy and procedures and with the requirements of the environmental management system;

b) the significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;

c) their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the environmental management system, including emergency preparedness and response requirements; and

d) the potential consequences of departure from specified operating procedures.

Personnel performing the tasks which can cause significant environmental impacts shall be competent on the basis of appropriate education, training and/or experience."

✓ ATTACHMENT G: EXAMPLE PROCEDURE FOR ENVIRONMENTAL TRAINING

The Company should ensure that people given environmental responsibilities within the framework of the Environmental Management System are trained to effectively handle these responsibilities (such as outlined in Table 8). This can be done through a formal environmental educational/training structure or integrated into other training programmes that may already exist, such as for quality or induction training.

In summary, in order to meet these requirements, the site must:

- identify training needs for all levels of employees;
- ensure that all personnel who work in areas related to environmentally significant issues have received appropriate training; and
- ensure that employees have relevant training for their function.

5.2.1 Training Needs

Employees

This section will investigate methods to identify environmental education and training needs for employees.

Specific Environmental Responsibilities have been determined in Section 5.1. These are summarised in Table 8, for general employee groups. It is anticipated that other groups will exist outside of the nominated groups, and therefore the table may need to be altered to suit particular company structures.

For those employees who have been identified as having specific environmental responsibilities, the identification of competencies, qualifications or skills required will provide a basis for a training needs analysis.

Training Needs Analysis

The proforma provided in Table 10 can be used to conduct and document a Training Needs Analysis.

Table 10

Employee Competence Record

Role	Roles Criteria (Training and experience required)	Person	Training Needs	Record of Proof of Training
EMS Auditor	Trained in management systems auditing	Fred Dunn	Under 5 day environmental management system auditor training course.	Completed EMS Auditor Certification Course (QSA Certified) and passes the exam.
	Aware of the site EMS			Involved in the development of the EMS
	Has had 5 years experience in livestock industry			Has 10 years in the livestock industry
Environmental Manager	Has livestock industry experience	Joe Buckley		Worked as Livestock co-ordinator at XYZ Feedlot
	Has had 3 years experience in environmental management			Environmental management at XYZ feedlot for 3 years
	Understands environmental law and its application to the feedlot			Completed course in Environmental Law by correspondence with Griffith University.

The following sections describe the detail of Table 9 above.

Roles

In this column the role of a particular employee at the facility is listed. The roles are for anyone that has an input to environmental management or has tasks associated with significant environmental issues. The requirement is to list all roles as considered appropriate for the facility.

Role Criteria

In this column, the competency criteria for each of the roles are established. Levels of competency may be identified through individual qualifications, acknowledged skills or years of experience in a particular position or field.

For example, an Environmental Management Representative may need to be trained in Environmental Management Systems Auditing and have had 5 years experience in the livestock industry to be able to demonstrate competence in their role.

Person

This column records name of the person who is in or has been nominated for the role as described in Column 1.

Training Needs

For each employee, the training needs are determined by assessing what training and/or experience is required for each employee to bring them up to the competence required for their position. This will depend on the existing level of training and competency of the individual..

Training courses that are available internally and externally will need to be identified to meet training needs. Details of typical training programs that may be appropriate are detailed below in Section 8.2. Once these training requirements are identified, a Training Plan can be developed that will plan the method for the provision of training as detailed. This is further discussed in Section 8.2.

Record of Proof of Training and Experience

In this column, records that demonstrate the training and experience of personnel are listed. This should be regularly updated to demonstrate that all personnel have sufficient training to be competent in their roles. These records will assist in the demonstration of due diligence.

ISO14001 requires that all people who perform tasks that can cause significant environmental impacts will need to demonstrate that they are competent to perform these tasks. Methods to do this include the passing of a test following a training course, certification with third party bodies, proven experience in the field or similar measures. These details should be included in the records of the needs analysis.

All facilities locations must identify training needs for contractors or suppliers who are employed at the property. Contractors who work on activities linked to significant environmental risks or impacts at the company should undertake induction training.

5.2.2 Environmental Training Program

Once the training needs analysis has been completed for personnel at the facility, an Environmental Training Program to progressively meet the requirements of the needs analysis (to achieve the required level of competency, qualifications or skills for personnel) will need to be developed.

The Training Program will define training to be undertaken by all personnel with environmental management responsibilities. The training, will vary depending on the findings of the training needs analysis, hence different levels of personnel will get different levels of training.

A list of some typical environmental training courses available is detailed in Table 11.

In order that the training requirements are kept up to date, there should be a mechanism for periodic review of the training needs, the available programs, and the implementation of the training plan.

5.2.3 Contractors

For contractors who may operate on your site, especially if their tasks relate to operations that are linked to significant impacts, training requirements should be identified and provided. The level of training may depend on their own company's environmental training, or the extent to which they operate at your site. At a minimum, induction training is considered essential. This should cover:

- Training on the emergency procedures for the site;
- Safety equipment required in certain areas;
- Significant environmental issues at the site;
- Environmental issues that people will be involved/responsible for; and
- Records should be kept of training requirements and training undertaken for contractors.

Table 11

Types of Training Courses for Employees and Contractors and their Expected Outcomes

Type of Training	Training Outcomes	Suggested Audience
1. 1. Environmental Compliance Training	Identification and awareness of legislative responsibilities. Awareness of due diligence liabilities. Updates on new and planned legislation.	Corporate managers. Employees whose actions can affect compliance.
2. Induction Training	Awareness of site and environmental issues at the site Awareness of the Environmental Management System and specific responsibilities for Environmental Management. Awareness of Environmental Emergency requirements specific to relevant personnel	All new personnel and contractors.
3. Environmental Issues and Awareness Training (this should be tailored to cover site specific and company specific issues, as well as an introduction to	Identifies environmental issues that people may not have understood or known of, therefore increases sense of commitment and environmental responsibility for their work activities. Instils a sense of environmental responsibility. Promotes involvement in environmental management.	All personnel

Type of Training	Training Outcomes	Suggested Audience
regulatory issues)	Provides baseline of knowledge for all to work from. Can provide a line of communication of environmental policy, requirements under the policy and corporate objectives to all employees, and thence achieve some level of commitment to these. Facilitates understanding of the organisation's intent in environmental management.	
4. Specific Training for procedures	Acceptance of procedures. Assurance that procedures are understood by all relevant personnel. Compliance with procedures. Increased awareness of the Environmental Management System and its objectives.	Staff who are required to perform specific duties in environmental management, especially those covered by specific procedures.
5. Environmental Management Systems Training	Increased sense of ownership of and involvement in the system. Awareness of the structure and elements of the system. Awareness of all significant roles and responsibilities in Environmental Management. Awareness of program for Environmental Management System implementation, achievement of objectives and targets etc. Awareness of documentation required for the system.	All personnel
6. Emergency Procedures Training	Continued awareness of emergency response procedures Awareness of evacuation procedures	All personnel
7. Environmental Compliance Auditor Training	Further consolidates environmental awareness and compliance training. Provides an in-house resource for identifying environmental issues, impacts and aspects. Reduces the requirement for use of external consultants. Establishes a core group of internal auditors that can conduct audits thereby keeping knowledge in-house.	Specific staff targeted to conduct environmental audits, to be involved in the audit process, or to be involved in developing impacts and aspects registers.
8. Environmental Management Systems Auditor Training	Provides an understanding of the potential problems and pitfalls of Environmental Management System. Detailed understanding of the Environmental Management System. Identifies what to look out for in Environmental Management System implementation and auditing.	Key personnel responsible for the development and implementation of Environmental Management System and any personnel requiring detailed understanding of the system.

✓ ATTACHMENT G: EXAMPLE ENVIRONMENTAL TRAINING PROCEDURE

5.3 Guidance on Control of Documentation

5.3.1 Environmental Management System Documentation

The ISO 14001 standard states the following requirements for documentation of an Environmental Management System. The organisation shall establish and maintain information, in paper and electronic form, to:

a) describe the core elements of the management system and their interaction;

b) provide direction to related documentation.

✓ ATTACHMENT H: ENVIRONMENTAL MANAGEMENT SYSTEM DOCUMENTATION

For ISO14001 compliance, a document or process should be developed which (in paper or electronic form) describes the core elements of the management system and how they interact. It should also provide direction to be able to identify the whereabouts of all documents and records generated by the Environmental Management System.

There are a number of ways in which this can be achieved. You can develop your Environmental Management System in such a way that there are electronic links (hypertext links) between the various documents and levels within the Environmental Management System.

Alternatively, you can write a front section to your Environmental Management System manual that describes the Environmental Management System and how it works.

The main links that need to be addressed in this part of the Environmental Management System are the following:

1) The hierarchy of defined goals and actions and how these relate to different departments:

Policy Objectives Targets Programme

2) The hierarchy of controls developed to monitor and reduce risks identified:

All environmental issues identified

↓

Those issues identified as "significant"

The operations/processes that result in the significant issues/risks

The defined operating parameters for the significant issues/risks

The monitoring procedures linked to the operating parameters

The operational control procedures/work instructions used to control these operations

3) The reporting processes to reflect communications from external parties to the company and how these are responded to (refer to section 5.1).

5.3.2 Document Control System

"The organization shall establish and maintain procedures for controlling all documents required by this International Standard to ensure that:

a) they can be located;

b) they are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;

c) the current versions of relevant documents are available at all locations where operations essential to the effective functioning of the environmental management system are performed;

d) obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use; and

e) any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.

Documentation shall be legible, dated (with dates of revision) and readily identifiable, maintained in an orderly manner and retained for a specified period. Procedures and responsibilities shall be established and maintained concerning the creation and modification of the various types of document."

✓ ATTACHMENT I: DOCUMENT CONTROL PROCEDURE

If you do not have a document control system as part of a quality management system you must develop a document control procedure which is implemented with regard to all the documents which form part of the Environmental Management System. It is a common failing in both quality and environmental management systems that document control systems merely cover procedures. This is a gross omission of one of the core purposes of the management system. The main purpose of the document control system is to ensure that all documents necessary to implement and to demonstrate effective implementation are maintained in an appropriate manner.

It should be remembered and is worth noting before going any further in the development of a document control system that it is very easy to allow the document control system to become too onerous. The purpose of the document control system is to support the Environmental Management System and to allow the company to improve its environmental performance.

The document control procedures should ensure that:

- all documents can be found;
- all documents are periodically reviewed, revised and approved for adequacy by authorised personnel. This should be defined so that someone is made responsible for this at a specified frequency;
- the current versions are used where appropriate;

- obsolete documents are promptly removed from all points of issue and use;
- documents are stored in a way that they remain legible;
- that documents are dated (including revision dates);
- all documents are retained for a specified period; and
- individuals have allocated responsibility for creating and modifying documents.

5.3.3 Records

Section 4.5.3 of ISO14001 states that 'the organisation shall establish and maintain procedures for the identification, maintenance and disposition of environmental records. These records shall include training records and the results of audits and reviews.

Environmental records shall be legible, identifiable and traceable to the activity, product or service involved. Environmental records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss. Their retention times shall be established and recorded.

Records shall be maintained, as appropriate to the system and to the organisation, to demonstrate conformance to the requirements of this International Standard."

✓ ATTACHMENT J: EMERGENCY PREPAREDNESS PROCEDURE

Records necessary as a minimum

You need to keep evidence of some of your decision-making processes with regards to environmental control of the significant aspects and some records which will enable you to demonstrate due diligence.

As a minimum it is recommended that the following records be kept:

- The process you went through to identify your environmental risks;
- The job descriptions or other means of allocating environmental responsibility;
- Legal requirements;
- Permits and licenses;
- Monitoring records;
- Environmental training records;
- Inspection, calibration and maintenance work;
- Details of non-conformances, accidents, complaints and subsequent follow-up action;

- Waste disposal information; and
- Contracts which define liabilities between contractors, suppliers and your company.

Record Keeping

You must keep environmental records to be able to demonstrate compliance with legislation, any memoranda of understanding that you may have agreed to and signed on to with local industrial groups or community groups and the Environmental Management System requirements itself. The latter is especially important if you intend to achieve certification to ISO14001 at some point in the future. Records are your means of showing that you have conducted certain activities that put you in a good position to demonstrate due diligence.

You should develop a procedure to ensure that records are kept in an appropriate manner. The procedure should include consideration of the following:

- Identification of what is worth keeping as a record;
- Collection of records;
- Indexing;
- Filing;
- Storage;
- Maintenance;
- Retrieval for future use;
- Retention times; and
- Final disposal (this should take into account the sensitivity of the information).

A simple record keeping system could be developed around a table listing the records that need to be kept, where the record can be found, the retention time and who is responsible for it as shown in Table 12.

Table 12
Record Keeping System

Record Name	Location	Retention Time	Responsible Person

Typical records that could be kept include effluent monitoring results, any monitoring required to demonstrate compliance with regulatory requirements, emissions data, product use, disposal volumes and any measurement of environmental performance with respect to benchmarks.

5.4 Emergency Preparedness

"The organization shall establish and maintain procedures to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.

The organisation shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.

The organisation shall also periodically test such procedures where practicable."

Emergency situations often have environmental impacts associated with them. For example, water you use to control fires can become contaminated and then discharge to waterways. In order to address these environmental issues, procedures need to be developed that prepare for and manage such emergencies. This section describes approaches for identifying and assessing potential types of emergency situations, and methods for developing strategies to prevent and prepare for in order that associated environmental impacts are minimised.

Most facilities will already have emergency or fire response procedures. In many cases, to cover the requirements of this section, the existing procedures may just need to be modified for environmental issues. The main steps to developing the requirements for this section involve:

1) Identification of the potential for environmental impacts from emergency situations;

2) Assigning responsibilities to employees for emergency management; and

3) Development of procedures for the management of environmental impacts from emergency situations.

For Environmental Management Systems that are to comply with the ISO14001 Standard, the following requirements must be met:

5.4.1 Identification of Environmental Emergencies

The first step is the identification of all possible environmental impacts from emergency situations. Whether an emergency situation requires a procedure or not will depend on the likelihood and consequence of the emergency occurring. If, through the consequence criteria and likelihood criteria, a significant impact has been identified from an emergency situation, then a procedure should be written to control the impacts.

Typical emergency situations and their causes in the feedlot industry that may require emergency procedures to be developed are detailed below.

Fires

Fires can lead to many environmental impacts. Some typical causes of fires in the feedlot industry are:

- electrical short circuiting;
- welding near flammable materials; and
- combustion of flammable materials.

The environmental impacts from such fires could include contamination of stormwater, release of toxic gases and production of hazardous waste (liquid and solid).

Liquid Waste Emergencies

Liquid waste emergencies include:

- Effluent discharge to receiving waters

The impacts from these emergencies include stormwater contamination affecting downstream watercourses e.g. increasing Biological Oxygen Demand levels in runoff receiving areas, sedimentation, and fire risk (in the case of dangerous goods waste).

Solid Waste Spills

Solid waste spills can occur in the handling, storage and processing of manure.

Chemical Spills/Leaks

Emergencies related to chemicals storage and handling include (but are not limited to):

- fuel and oil leaks from above ground and underground storages and piping.
- Livestock feed spills.

Loss of Power

- Pump controls.

5.4.2 Development of procedures for the management of identified potential environmental emergencies

Once the emergency situations have been identified, and those requiring procedures to be written are selected, procedures should be developed. Responsibilities need to be allocated for the development of the emergency procedures and for the implementation of the procedures. These responsibilities should be included in the emergency procedures developed for this section.

Where possible, existing emergency response plans or procedures should be reviewed and where appropriate modified to include coverage of environmental emergencies.

The following requirements apply to the implementation of emergency response plans/procedures:

- all employees with specific responsibilities in emergency response plans must undergo initial and periodic refresher training; and
- drills involving people, equipment and where necessary, external emergency services providers (such as the fire brigade or the State Emergency Service) must be undertaken on a planned basis at regular intervals.

Other tasks to be considered in developing procedures for emergency response

There are a number of other tasks and requirements that should be considered of importance in the development of an emergency response plan or procedures.

In summary these tasks are:

- assign responsibility for internal and external communication;
- develop emergency contact lists for internal and external contacts;
- establish criteria for notification of the emergency to senior management;
- establish a hazardous materials inventory for internal and external use;
- identify local emergency services providers and other local providers of expertise which may be of assistance in managing an emergency;
- identify neighbours who should be advised in the event of an emergency;
- identify specific training needs for persons with specific emergency response responsibility;
- identify community communication requirements;
- detail the scope of the plan/procedure(s);
- detail the purpose of the plan/procedure(s);
- having on site spill kits for clean up of liquid waste and chemical spills;
- consider processes for disposal of contaminated absorbent material used during spill response;
- documentation and reporting of incidents;
- review and revision of emergency response procedures;

- distribution list; and
- area and plant maps and plans.

5.5 Operational Control Procedures and Monitoring Procedures

5.5.1 Operational Control Procedures

**For companies aiming at ISO14001 certification, the standard requires that "*the organization shall identify those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. The organization shall plan these activities, including maintenance, in order to ensure that they are carried out under specified conditions by:*

a) establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets;

b) stipulating operating criteria in the procedures; and

c) establishing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the organization and communicating relevant procedures and requirements to suppliers and contractors."

✓ ATTACHMENT K: OPERATIONAL CONTROL PROCEDURES

This section discusses the development of formal systems of control for the operations at the facility such that all significant environmental issues identified that relate to facility operations are being appropriately managed. The development, implementation and maintenance of operational controls are a critical aspect of the ability to demonstrate due diligence in environmental management.

Areas outside of production, such as wastewater treatment or waste disposal usually did not have existing procedures and new procedures were needed relating to environmental management.

The use of existing Quality Procedures in the development of Operational Procedures has the following advantages:

- integration of management systems and therefore reduced overlap or duplication between systems; and
- reduced development time and ease of use through people being familiar with the format of the existing procedures.

In your existing management systems such as your quality system, operational control procedures that you may have in place could be called:

- Standard Work Instructions (SWIs);
- Standard Operating Procedures (SOPs);
- Standard Work Procedures (SWPs);
- Work Instructions (WIs); and/or
- Document procedures such as Checklists.

It is very important that Operating Procedures, whatever their form or name, state the following:

- **Who** is responsible for tasks or other requirements as set out in the procedure;
- **What** controls need to be in place for each operation; and
- **When** the activities described in the procedure are to be implemented.

Companies who have developed Operational Procedures using this tool have found that the success of developing the procedures depended heavily on how effectively the "Who, What, and When" of the procedure was covered. If these three areas were not considered, the effectiveness of the procedure was found to be diminished considerably. Conversely, any detail not related to these three areas is likely to be superfluous.

The procedures should be pro-active rather than reactive so that risks associated with an activity are reduced through preventative measures. For example, consider a situation at a feedlot where there is a significant risk of feed spillage by tractor impact. The Operation Control Procedures would need to control a number of aspects of the operations such as the competency of tractor drivers, the pre-inspection of tractors each shift, tractor speeds, routing of the tractors, barriers around the storage areas and other storage specifications (from storage procedures). More than one procedure will cover all of the factors involved in such an incident.

Operational criteria may also be needed to define the key characteristics of the operation, as the operational criteria can be directly related to environmental impacts. For example, the operational control procedure related to the effluent treatment will need to specify effluent quality prior to irrigation and irrigation conditions.

For feedlots, depending on where significant risks are identified, written operational controls are likely to be needed for:

- effluent treatment;
- effluent irrigation;
- pen maintenance;
- manure management;

- farming operations, e.g. silage, paddock erosion, sampling;
- waste disposal and contractor management.

5.5.2 Monitoring

There are specific requirements for monitoring in the ISO14001 standard, as stated below.

"The organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. This shall include the recording of information to track performance, relevant operational controls and conformance with the organisation's environmental objectives and targets.

Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to the organisation's procedures.

The organisation shall establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations."

✓ ATTACHMENT L: MONITORING PROCEDURES

For any organisation there will be minimum monitoring requirements. These are typically:

- Detailed in legislative requirements: These may be stipulated or enforced by the Department of Primary Industries (or equivalent), EPA (or equivalent in your state), local council or the local water authority. What ever these monitoring requirements are, they should have been identified and detailed in the Legal Register as developed for Section 4 of this manual;
- For any activity or process identified that may impact on neighbours or the community that the facility needs to directly manage;
- Monitoring to demonstrate due diligence;
- Monitoring of significant issues; and
- Tracking of progress on objectives and targets.

In order to develop procedures as part of this section, it is worth considering the following steps:

1. Identify what needs to be monitored. This is defined as the key characteristics of the operations that have had significant risks associated with them as well as legislative requirements, due diligence or here monitoring is need in problematic areas;
2. Identify a method for conducting the monitoring;
3. Implement the monitoring;

4. Record the results of the monitoring; and

5. Use the results, to prove or otherwise, compliance with legal requirements, corporate policies and other benchmarks.

Monitoring of key characteristics of Operations and Activities

The first part of this requirement discusses procedures to monitor and measure key characteristics of operations and activities. The significant issues need to be monitored so that deviations, trends and excursions from pre-determined operating parameters are recorded and so that due diligence records are generated and maintained.

Monitoring may be quantitative such as effluent monitoring, for example, for water quality such as BOD or pH, or it may be qualitative such as monitoring the effectiveness of cleaning activities.

Where monitoring requirements can be described succinctly so that they can be detailed in the table, there may be no need for further documentation outside of the table. If, however, a detailed procedure is needed to define the monitoring required, a separate procedure should be written.

Tracking performance

Monitoring on its own is no use unless the results are measured against an appropriate standard or other specific criteria to determine the level of performance of the activity or operation being monitored. It is important that for each operation monitored, the results are compared against the appropriate criteria and the results recorded.

As discussed in the above section, operational criteria are often key characteristics to determine the environmental impacts of a particular operation. It is therefore important that environmental monitoring covers relevant operational controls, for example, controls detailed in the procedures developed in Section 5.5.1. The monitoring should be able to provide a record of when operational controls have not been successful in meeting relevant standards or benchmarks and be used in a timely fashion to find a solution.

6.1 Avoiding, Reporting and Solving Problems

Section 4.5.2 of ISO 14001 states that "The organisation shall establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformanace, taking action to mitigate any impacts cause and for initiating and completing corrective and preventive action.

Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of problems and commensurate with the environmental impact encountered.

The organisation shall implement and record any changes in the documented procedures resulting from corrective and preventive action.

✓ ATTACHMENT M: CORRECTIVE AND PREVENTIVE ACTION PROCEDURE

If something goes wrong on site what happens?

This section of the Environmental Management System will assist you to develop an answer to this question.

You probably have systems for identifying non-conformances with quality criteria and food safety/hygiene criteria. If something were to happen that could or did affect the environment do you have similar systems?

The benefits of investigating accidents should be obvious. If something goes wrong it is important that management is informed so that the appropriate actions can be taken and that similar events can be prevented.

At the start of the development of an Environmental Management System it is acceptable if only environmental accidents are reported and investigated. As the Environmental Management System becomes more sophisticated the accident reporting system should be expanded so that near-misses are also reported and the lessons that can be learnt to prevent them are learnt.

It should be the responsibility of all employees to report accidents and near misses. To ensure that they are able to do this they will need to be trained in what constitutes an environmental accident and/or near miss and how they should report it and to whom.

This means there must be a very visible and easy to use system in place to allow them to do this.

The types of events (or potential events) that should be reported and investigated include:

- Spills;
- Complaints from the community or local authorities;

- Breaches of licence or discharge conditions; and
- Raw material wastage.

It is recommended that a non-conformance or accident reporting form be developed and distributed around the site. Table 13 provides an example of such a form. The form requires the following to be recorded:

- a description of the event;
- the immediate response taken;
- corrective actions to be taken; and
- sign-off for actions taken.

One of the most important parts to the form is the Corrective Action. The Corrective Action is the longer-term response that is determined to be required in order that a similar environmental undesired event will not happen in the future.

Systems should be established for the logging of all non-conformances or environmentally undesired event reports as well as systems to ensure that:

- persons are delegated to be responsible for corrective actions;
- the corrective actions are developed and completed; and
- the corrective actions are signed off.

Staff should be trained on the importance of using the form and how to fill it out.

Depending on your facility, you may find it useful for some or all of these systems to be electronically based.

If a comprehensive system is to be developed then a written procedure should be developed which documents the following:

- The type of events which should be reported;
- The timing and how events should be reported;
- Who should be notified (internal and external);
- Who is responsible for conducting investigations;
- How to conduct the investigation; and
- The reports that should be prepared.

Table 13
Environmental Undesired Event Reporting Form

Description	Reported by: _____ Date: _____ Reported to: Time: Location: Significance: High ☐ Medium ☐ Low ☐ Brief Description
Immediate Response	Actions taken at scene:

Corrective Action	Actions needed to prevent recurrence:	(Responsible person)
	1.	1.
	2.	2.
	3.	3.
	4.	4.

Sign-off	Sign off actions taken:
	1.
	2.
	3.
	4.
	All actions taken-sign off: _____ Date:

It is suggested that a two tiered system be developed in that all accidents and events are reported and only the significant events are investigated. It will be necessary for you to define the criteria that will make an event be of high, medium or low significance. Many organisations document this on the reverse of the form. The form itself does not need to be A4, in fact many companies have the forms printed specially and have them in pocket book size.

Many organisations have found it useful for the forms to be printed on carbon paper so that multiple copies can be made. For example, three copies might be made: the first is retained by the employee reporting the event, the second may be sent to the supervisor and the third to the Environmental Coordinator.

Use of these systems to show that events are reported and that the actions taken are recorded will assist in demonstrating due diligence.

Formal training should be provided to all personnel involved in the investigation of significant accidents. This training should include how to evaluate what the root causes were that caused an event and how to report these and suggest actions to prevent recurrence.

Periodically, for example on an annual basis, the accident report forms can be analysed to assess whether there are trends that have occurred. These trends could be that accidents occur most frequently in one department or on one shift or that the root cause for accidents always appears to be a lack of awareness amongst staff. This type of periodic evaluation is a very powerful source of management information. The findings will probably have knock-on effects in other management areas such as safety and quality.

6.2 Audits and Reviews

6.2.1 Environmental Compliance Audits

ISO14001 states that "*the organisation shall establish and maintain a documented procedure for evaluating compliance with relevant environmental legislation and regulations*".

These audits are designed to evaluate the degree to which the company conforms to specific criteria. The criteria against which the audit is to take place must be clearly defined for both the auditor and the auditee.

The most common form of compliance audit involves performance assessment against legal requirements. Your Environmental Management System should include some form of periodic legal compliance evaluation. This can be in the form of an audit. It is recommended that suitably trained and/or experienced auditors conduct legal compliance audits at least annually.

A checklist of issues that needs to be addressed in the compliance audits should be developed. It is recommended that the compliance auditors develop and use a checklist specifically designed for the site in question and tick off each item as it is assessed in the audit. In this way the auditors will investigate the same things and the tick-off sheet will provide a record that the auditor considered those issues.

Persons responsible for conducting the audits should be trained in auditing skills and the requirements of the relevant environmental legislation.

6.2.2 Environmental Management System Audits

Section 4.5.4 of ISO14001 states that "the organisation shall establish and maintain (a) programme(s) and procedure for periodic environmental management system audits to be carried out, in order to:

a) determine whether or not the Environmental Management System

1. ***Conforms to planned arrangements for environmental management including the requirements of the International Standard, and***
2. ***has been properly implemented and maintained; and***

b) provide information on the results of audits to management.'

The organisation's audit programme, including any schedule, shall be based on the environmental importance of the activity concerned and the results of previous audits. In order to be comprehensive, the audit procedures shall cover the audit scope, frequency and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results."

In addition to ISO14001, there are other standards that are relevant to Environmental Management System Audits, in particular ISO190011:2002 Guidelines for Quality and/or EMS auditing.

Environmental Management System auditing has two key facets:

1. First, it must be determined if the management system structure and content satisfies the overall intent of having the Environmental Management System. This step of the management system audit is often termed a 'documentation adequacy' audit. This is conducted to verify that the system documentation is adequate in terms of the relevant legal, ISO14001 commitments and other company requirements. In addition, the documentation adequacy audit should determine if all appropriate environmental issues and risks have been identified. A site visit or tour is required to accomplish this.

2. Second, once the structure and documentation of the system has been validated, an 'implementation' audit needs to be conducted to confirm whether or not the documented requirements are being implemented and whether the implementation is effective. The audit is a detailed process that reviews the process, activities and outcomes of the organisation in detail. The audit should evaluate the extent to which policy objectives and targets are being met.

Both the documentation adequacy and implementation audits must be undertaken to provide a total Environmental Management System audit.

Type of management system audit

The audit type can be considered in two basic ways. Firstly, audits can be classified on the basis of who conducts them, either first, second or third party. The second method of classification is according to

location and whether the audit is conducted within the auditors own organisation or not, i.e. internal or external.

First party audits are audits where both the auditor and auditee both work for the same organisation. These audits are typically less formal and take less time than other audits.

Second party audits are those where the auditee is from a customer organisation. Accordingly, the focus of the second party audits is on the contractual relationship between the two parties. Normally issues not affecting the contract are not subject to assessment.

Third party audits are carried out by independent bodies and may or may not be accredited by a body such as JAS/ANZ. These audits are often the most formal and are normally focussed on ISO14001 or regulatory requirements.

Audit Phases

There are four audit phases within the total audit process:

1. Preparation and planning;
2. Performance of the audit;
3. Reporting; and
4. Follow-up.

During the preparation and planning phase of the audit, the development of detailed audit checklist is important. The checklists will detail the depth of the audit and act as verifiable documentation for external audits.

The performance phase of the audit is the most visible to most of the workforce and yet should only take approximately 30% of the time.

Environmental Management System audits should be conducted by individuals who have at least several years experience in the feedlot industry, have been trained in the techniques of system auditing and have some environmental knowledge.

During certification to ISO14001 the qualifications of the system auditors is often evaluated so it is important that the appropriate personnel are used.

The Environmental Management System audits can be conducted in one of three ways:

1. by department for the whole system i.e. select a department and audit all elements of the environmental management system applicable to that department;
2. by element of the Environmental Management System standard for the whole company; and
3. by aspect or impact i.e. select an environmental issue that is significant and follow its management through the system

It is recommended that the Environmental Management System audit reports be written to include a summary of the audit findings to act as a record that the audit took place. The detail of the audit findings should be documented as non-conformances and should therefore fall into the management system for dealing with non-conformance (See Section 6.1)

The auditor and the auditee both have responsibility for follow-up of the findings of the audits. The auditee should be responsible for determining the corrective actions needed and initiating action to correct non-conformances and correcting the causes of the non-conformances. The auditor is responsible for undertaking the follow-up to verify that the corrective action is adequate and should be involved in the close out of the corrective action form.

6.2.3 Management System Reviews

Section 4.6 of ISO14001 states that "The organisation's top management shall, at intervals that it determines, review the environmental management system, to ensure its continued suitability, adequacy and effectiveness. The management review process shall ensure that the necessary information is collected to allow management to carry out this evaluation. This review shall be documented.

The management review shall address the possible need for changes to policy, objectives and other elements of the environmental management system, in the light of environmental management system audit results, changing circumstances and the commitment to continual improvement."

✓ ATTACHMENT N: ENVIRONMENTAL MANAGEMENT REVIEW PROCEDURE

It is important that the Environmental Management System is reviewed periodically. The review frequency is up to you but it is recommended that it is conducted at least annually. In the review you should consider:

- the **continuing suitability** of the Environmental Management System for the activities and operations occurring at the facility i.e. is the system still suitable for current operations?;
- the **adequacy** of the Environmental Management System i.e. does the system cover all environmental issues at the facility? and
- the **effectiveness** of the Environmental Management System i.e. is the system properly implemented and maintained?

The review will be particularly important if the process has changed. You should establish systems to ensure that environmental considerations are made if the following changes occur:

- new risks are identified as a result of new information, new external pressures, changes in scientific knowledge etc;
- if new raw materials or new suppliers or contractors are used;

- if the processes are changed (equipment and new products);
- changes in the relevant environmental legislation;
- production throughput changes;
- the scope of the environmental management system changes; and
- employees change (whether or not they are key to the environmental management system).

The reviews should be documented. The following provides a list of issues that review team members should assess before the review meeting so that their findings can be discussed:

1. The company environmental policy.
2. Audit reports for their area.
3. Minutes of previous system reviews.
4. Monitoring results (technical monitoring, monitoring against improvement goals etc).
5. Complaints and other communication with external parties.
6. Environmental corrective action request forms/accident report forms.
7. Progress against objectives and targets.

Minutes of the environmental management system review meeting should be taken and a copy kept as a record.

Actions arising from the review should be incorporated into the improvement programme (See Section 4.3) and/or as corrective action requests (see Section 6.1).

ACTION CHECKLIST:	DONE Y/N	DATE COMPLETED
ENVIRONMENTAL POLICY		
Have you obtained and defined Corporate or Senior Level support and commitment for Environmental Management?		
Have you decided on the wording of the Policy required to define the Company commitment in developing the Environmental Management System?		
Have you written the Policy?		
Have you decided the extent to which you wish to publicise the policy?		
Have you identified the methods to communicate the Policy to employees and the public?		
Have you started communicating the Policy to employees and/or externally?		
Have you determined what mechanism will be used to update the Policy?		
LEGAL AND OTHER REQUIREMENTS		
Have you identified sources of environmental legislation?		
Have you developed a legal register that summarises environmental legislation and other requirements relevant to your facility?		
Have you assigned responsibility for the management of a legal register?		
Have you identified requirements of licenses, permits, Codes of Practice and other standards?		
Have you developed a procedure outlining how to prepare the legal register and keep it up to date?		
Have you implemented your procedure?		
ENVIRONMENTAL ASPECTS		
Have you assembled a knowledgeable team to manage the identification of environmental risks		

ACTION CHECKLIST:	DONE Y/N	DATE COMPLETED
Have you developed a flow diagram for the activities at your site to assist in identification of environmental inputs and outputs of the operations?		
Have you verified that the Environmental Process Flow diagrams are accurate based on a walk around tour of your facility?		
Have you defined the consequence criteria you will use for your assessment of significance?		
Have you defined the likelihood criteria you will use for your assessment of significance?		
Have you documented likelihood and consequence criteria for your facility?		
Have you understood the significance concept and table?		
Have you applied the significancy model to the environmental issues identified at your facility?		
Have you developed a register that details the environmental issues and their significance at your facility?		
OBJECTIVES AND TARGETS AND ENVIRONMENTAL MANAGEMENT PROGRAMS		
Have you developed objectives and targets for your site to improve its environmental performance based on the risk identified and the Policy of your site?		
Have you prepared environmental management programs or completed the template as provided or a similar system to record the Objectives, Priorities, Targets, Actions, responsible persons deadlines and costs for environmental improvement at your site?		
Have you demonstrated partial achievement of your objectives and targets?		
ROLES AND RESPONSIBILITIES		
Have you nominated an appropriate environmental management representative?		
Have you defined general roles and responsibilities for all staff with respect to ISO 14001?		

ACTION CHECKLIST:	DONE Y/N	DATE COMPLETED
Have you communicated these in an appropriate way (i.e. job descriptions, procedures, etc.).		
Have you identified how your facility will manage the communication of environmental management and the Environmental Management System to employees at your facility and to Corporate personnel?		
Have you developed procedures to formalise these communications?		
COMMUNICATION		
Have you identified how your facility will manage the communication of environmental management and the Environmental Management System to external parties such as government authorities and the general public		
Have you identified how your facility will manage the communication of environmental management and the Environmental Management System to external parties such as government authorities and the general public?		
Have you identified how you will handle complaints?		
Have you identified the need for communications with local authorities with respect to planning requirements for future works with significant environmental risks or impacts?		
Have you developed procedures to formalise these communications?		
RECORDS/DOCUMENTS		
Have you identified the minimum records that your facility should keep?		
Have you identified which documents are required to be kept as part of your environmental management system?		
Have you developed procedures detailing what records will be kept and how?		
Have you developed a document control system suitable for your Environmental Management System?		
Have you developed a procedure on document control?		

ACTION CHECKLIST:	DONE Y/N	DATE COMPLETED
Have you developed a record keeping system?		
EMERGENCY RESPONSE		
Have you identified the potential emergency situations at your site that could lead to significant environmental impacts?		
Have you assigned responsibility for management of the identified emergency situations?		
Have you developed procedures for the management of the identified potential environmental emergencies?		
Have you undertaken practice drills for emergency response?		
OPERATIONAL CONTROL		
Have you developed and documented Operating Control Procedures for activities that are related to the significant environmental risk or impacts?		
Do the Operating Procedures contain: • Who is responsible for tasks as set out in the procedure?; • What controls need to be in place for each operation?; • When the activities in the procedure should be implemented?; and • Defined operating criteria or conditions for the activity or process described in the procedure?		
Have the people who need to know the procedures been trained on them?		
MONITORING		
Have you developed and documented Monitoring Procedures for activities that are related to significant environmental risks or impacts?		

ACTION CHECKLIST:	DONE Y/N	DATE COMPLETED
Do the Monitoring Procedures contain: • Who is responsible for tasks as set out in the procedure?; • What needs to be done to conduct the monitoring?; and • When the activities should be implemented?		
Have you developed a system where monitoring results are compared against criteria or benchmarks to determine performance levels?		
TRAINING		
Have you conducted an Environmental Training Needs Analysis? This includes: • Ensuring the competency criteria for each role is determined; • Identification of training needs for individuals or positions with responsibilities in environmental management in order that the required level of training is provided to all relevant personnel; • Recording the process of the needs analysis and training provided. • Recording data maintained to demonstrate competency of people in their roles.		
Have you developed a Training Program to meet training needs?		
Have you identified a plan for implementing the training program?		
Have you identified a method for updating the environmental training needs analysis as required?		
Have you developed a training procedure?		
CHECKING AND CORRECTIVE ACTION		
Have you identified the types of events that require reporting?		
Have you assigned responsibilities with regard to environmental incident investigation?		

ACTION CHECKLIST:	DONE Y/N	DATE COMPLETED
Have you developed a form to enable the reporting of incidents?		
Have you developed a system for the logging of environmental incident reports?		
Have you developed a system for ensuring corrective actions are determined, completed and signed-off?		
Have you trained staff on the use of the forms and when they are required?		
AUDITS AND REVIEWS		
Have you developed appropriate evaluation systems for the management system you are developing?		
Have you developed procedures that specify the details and frequency of the Management System Reviews?		

Attachment A
Australian Country Choice
Environmental Policy

Attachment B
Legal and Other Requirements Procedure

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

MEAT & LIVESTOCK
AUSTRALIA

Attachment C

Legal and Other Requirements Register

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

URS

MEAT & LIVESTOCK AUSTRALIA

Attachment D
Procedure for the Identification of Environmental Risks

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

MEAT & LIVESTOCK
AUSTRALIA

Attachment E
Process Flow Diagram
Brisbane Valley Feedlot

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

MEAT & LIVESTOCK
AUSTRALIA

Attachment F
Procedure for Environmental Communications

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

MEAT & LIVESTOCK AUSTRALIA

Attachment H
Environmental Management System
Procedure

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

Meat & Livestock Australia Limited ABN 39 081 678 364. Level 1, 165 Walker Street, North Sydney NSW 2060
Locked Bag 991, North Sydney NSW 2059 Tel +61 2 9463 9333 Fax +61 2 9463 9393 www.mla.com.au

Attachment L
Monitoring Procedure

Attachment M
Corrective and Preventive Action Procedure

Attachment N
Environmental Management Review Procedure

9 September 2003.

Sheep feedlots.

Supply chain and management considerations (Garry McAlister, Matt Bishop)

Purpose

Production feeding

- Finishing carry over lambs
- Early weaned lambs – drought management
- Flushing of ewes prior to joining
- Addition of weight prior to live export

Maintenance feeding

- Preparation for live export
- Pasture/ environmental saving in times of drought – maintenance feeding

Constraints

Forward contracts for sale – long term supply
Year round supply to market specifications
    Domestic market
    Export markets
Suitability of feeder lambs
Economics of feeding management
Cost/ Benefit and business sustainability
Legislative/ environmental requirements

Attendees

AWI – Lu Hogan
Wool producers representatives
Sheepmeat Council Scott Hansen/ SMC Rep
Processors
    Castricum Bros
    Tatiaria
State Departments
    WA, SA, NSW, Vic
Private Consultants - Graham Peart, San Jolly, Tom Bull
3-4 active sheep feedlotters
MLA – GMcA, GS, AB, MB, Ds?

Outcomes required

1. Manual of existing information – Feedlotting of sheep
    a. Feedlot design and siting
    b. Legislative requirements
    c. Selection of feeder sheep
    d. Nutrition and nutritional management
    e. Economics of production and marketing
    f. Animal health management in the feedlot
    g. Market selection and supply contracts
2. Business performance and identification of key performance/ business parameters for a successful long term feeding business
3. Identification of information gaps
4. Future R&D needs and possible research collaborators.
5. Budgets and timeframes

Workshop

1. Available information – Garry McAlister
2. Producer perspective and issues - ??????
    Why do it
    Economics of production
    Key parameters for profitability
3. Specific issues
    a. Market specifications - Castricum Bros
    b. Supplying to those specifications – Matt Bishop ?
        i. Suitability of feeder lambs
        ii. Market specifications - industry segment and country
        iii. Eating quality - grain fed verses pasture reared
        iv. Product integrity/ QA traceability
4. The advisor/ consultant perspective – Graham Peart, San Jolly
5. What makes the business sustainable in the longer term

Next steps and timelines