**Attendee Workbook**

### Purpose

This workbook is to be used with the Environmental Management course. It is structured to capture individual and group activities conducted during the course.

The workbook has been prepared by Michael Voss, Owner of PYXIS.co.nz. Your facilitator will conduct the course according to the needs of course attendees. This may mean that your course may deviate from the original planned schedule. As a result not all activities covered in this workbook may be covered during the course. Your facilitator may conduct additional activities. Notes pages have been included for these additional activities.

The presentation slides used by your facilitator are included in your Attendee Pack. This material is printed with space for your own notes.

This Workbook provides a record of your work conducted during the course.

### Your Details

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Course Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Course Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Facilitated By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Organisation you work for:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Where do you work in your organisation:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Rate your own knowledge of the ISO 14001 standard?**

0 2 4 6 8 10

none learning with supervision learnt able to train others experienced trainer

**What do you hope to gain from attending this course?**

**1.**

**2.**

**3.**

**Exercise 1: GHG emissions for your organisation**

Instructions:

* 1. List the top three contributors towards your total GHG emissions.

|  |  |
| --- | --- |
| Contributor | tonnes CO2-e |
| TOTAL GHG |  |
| 1. |  |
| 2. |  |
| 3. |  |

**Exercise 2: Is Life Cycle Assessment important for your organisation? If so list the products involved.**

|  |
| --- |
| Products where ‘cradle to grave’ impact on the environment is important |
|  |

**Exercise 3: At what stage of ISO 14001 implementation is your organisation?**

|  |
| --- |
| Mark the stage of ISO 14001 Implementation that we are currently at |
| 1. Getting and maintaining management commitment
2. The baseline assessment
3. Develop a draft environmental policy
4. Develop environmental indicators
5. Improving environmental performance
 |

**Exercise 4: Analyse Case Study Environmental Policy**

Instructions:

1. Read publicly available information for Case Study organisation
2. Use the Environmental Policy Checklist to assess the areas of compliance and opportunities for improvement

|  |  |  |
| --- | --- | --- |
| Organisation | Areas of Compliance | Opportunities for Improvement |
|  |  |  |

**Exercise 5: Prepare Environmental Policy for your Organisation**

Instructions:

1. Prepare an Environmental Policy for your organisation

|  |
| --- |
| Environmental Policy |
|  |

 Tip: Use your Business Factors Worksheet

**Session 6: Prepare an Environmental Model**

Instructions:

1. Describe the key Activities for your Organisation

Tip: Use Business Factors Worksheet, ‘Facilities & Functions’

1. List all the Locations that these Activities are carried out
2. List the Operating Mode e.g. Normal, Abnormal, Emergency

|  |  |  |  |
| --- | --- | --- | --- |
| Activity | Activity Description | Location | Operating Mode |
|  |  |  |  |

1. Define the key Inputs to your Organisation

Tip: Use Business Factors Worksheet, including ‘Suppliers and Partners’

|  |  |
| --- | --- |
| Input | Input Description |
|  |  |

1. Define the key Outputs from your Organisation

Tip: Use Business Factors Worksheet, including ‘Products & Services’, ‘Facilities & Functions’, and ‘Regulatory Environment’

|  |  |
| --- | --- |
| Output | Output Description |
|  |  |

1. Complete a high level Environmental Model for your organisation

**Environmental Model**



**Exercise 7: Develop Environmental Indicators for your Organisation**

Instructions:

1. Use your Environmental Model to list key Environmental Indicators
2. List Objectives for these indicators
3. List Measures that will be used to track progress

Tip: Environmental Policy Example organisations include examples.

|  |  |  |
| --- | --- | --- |
| Indicator | Objective | Measure |
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Describe each key Resource Used by your Organisation (in the ‘Detailed Description’ column)

**Exercise 8: Inputs and Outputs**

Instructions:

1. List the Inputs and Outputs (from Input and Output tables from Session 7) in the Environmental Aspect Register – Identification sheet
2. Describe each Input and Output (in the ‘Detailed Description’ column
3. List the Aspect, Interaction and Impact

**Exercise 9: Resources Used**

Instructions:

1. List the Activity
2. Describe each key Resource Used by your Organisation (in the ‘Detailed Description’ column

Tip: Use aspects examples questions to ask

1. Enter ‘Resource Use’ in the Environmental Aspect column
2. Complete the ‘Interaction’ column. e.g. water, energy, solid waste

Tip 1: Where reductions in Resource Use through for example re-use, re-cycling occur, then this has an improvement effect. For such improvements the Activity should be ‘Resource Recovery’, and the ‘Interaction’ listed as ‘Conservation’. e.g. The return of pallets, containers and packaging to the supplier reduces and amount of Resource Use needed for packaging.

Tip 2: Where the Activity is beneficial for your organisation, the community or society as a whole, then this is an improvement effect. For such improvements the Activity should be ‘Product Stewardship’, and the ‘Interaction’ listed as ‘Conservation’. e.g. The removal of sulphur from fuel as part of refining operations allows for reduced pollution due to particulates, allowing the use of more efficient vehicles.

**Exercise 10: Develop Aspects for your business**

Instructions:

1. Provide a Detailed Description for each key emission and discharge from your Organisation (in the Detailed Description column of the Aspects Identification Register

Tip: Computer users may use the Aspects Identification Register template for this Session. Otherwise use the table in Appendix 1.

1. List the Environmental Aspect according to your organisation’s Environmental model. e.g. Energy emission, Discharge to land, Wastewater
2. Enter the Interaction with the environment. e.g. water, energy, solid waste
3. List the Impact on the environment. e.g. community, land pollution, flora/fauna

Tip: Use aspects examples questions to ask

**Exercise 11: Determine Significant Aspects**

Instructions:

1. Using the Risk Assessment Matrix (table below) rate each Aspect according to its RAM Status WITHOUT controls in place

**Risk Assessment Matrix – environment dimension**

|  |  |  |
| --- | --- | --- |
|   | **Risk Assessment Matrix** | **Probability** |
|   | **Potential Consequences** | **0.33** | **0.66** | **1.00** |
|  | **Environmental Dimension** | Never heard of in Company or Industry | Has occurred before in Company or Industry | Happens repeatedly in Company or Industry |
| **0** | No impact | Track | Track | Track |
| **1** | Slight effect within site | Track | Low | Low |
| **2** | Single breach or complaint | Low | Low | Medium |
| **3** | Local effect, repeated breaches, or many complaints | Low | Medium  | High |
| **4** | Major effect, extended breach, severe damage, or widespread nuisance | Medium | High | High |

Note: Environmental Aspects having an Improvement effect do NOT require to have their RAM Status determined

Tip: Computer users may use the Aspects Register template for this Session. Otherwise use the table in Appendix 1.

Note: Controls may include for example inspection, testing, procedures, plans, training, recycling

1. Describe your RAM rating assessment in the ‘RAM Justification’ column.

**Exercise 12: Controls for Significant Aspects**

1. Each identified Environmental Aspect with a RAM Rating of Medium or High is Significant, and needs to be included in the Environmental Aspects Register
2. List the Controls in place for each significant Environmental Aspect

Note: Controls may include for example inspection, testing, procedures, plans, training, recycling

1. Re-RAM each Significant Aspect this time WITH Controls in place, using the same Risk Assessment Matrix as in Session 12.

**Exercise 13: Prioritising Significant Aspects**

1. Using the Controls Ranking Table rate each Aspect according to the Status and Effectiveness of the Controls.

**Controls Ranking Table**

|  |  |
| --- | --- |
| **Status** | **Effectiveness** |
| **Description** | **Factor** | **Description** | **Factor** |
| Control implemented for control, or mitigation of impact | 1 | Highly effective and automated or controlled | 1 |
| Control only partially in place, partially addresses the impact, or planned to be developed | 2 | Effective but requires management | 3 |
| Control does not address the impact | 3 | Exists but requires close management | 6 |
|  |  | Does not exist | 10 |

Note: Status and Effectiveness columns are in the Environmental Aspects Register

Tip: Computer users will note the ‘Controls Ranking’ calculates. Appendix 2 users will need to manually enter the Ranking = Status x Effectiveness into the ‘Controls Ranking’ column.

Tip: Computer users can ‘Sort Descending’ on the ‘Controls Ranking’ column to provide a prioritised list of environmental aspects based on the status and effectiveness of controls.

**Exercise 14: Compliance obligations**

1. Using the Acts and Legislation Register template (Environmental Registers spreadsheet, or Appendix 3), list legal and other requirements for your organisation.

Tip: Refer to Regulatory Environment of Business Factors

**Exercise 15: Key steps in your Improvement process**

1. Name the steps in your organisation’s improvement process

|  |  |
| --- | --- |
| Administration Stage | Action Stage |
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**Exercise 16: The 3 most important actions that you need to initiate are**

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**Exercise 17**: **Review against your original course expectations**

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**Notes:**

**Notes:**

Appendix 1: Aspects Identification Register

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity, Product, Service** | **Location** | **Operation Mode** | **Environmental Aspect** | **Interaction** | **Detailed Description** | **Impact** | **RAM Status** | **RAM Rating** | **RAM Justification** |
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Appendix 2: Environmental Aspects Register

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity, Product, Service** | **Location** | **Operation Mode** | **Environmental Aspect** | **Interaction** | **Detailed Description** | **Impact** | **Controls** | **Status Controls** | **Effectiveness Controls** | **Controls Ranking** | **Re- RAM Status**  | **Re- RAM Rating** | **Re-RAM Justification** |
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Appendix 3: Acts and Legislation Register

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| **Name**  | **Description** | **How it affects Business** | **Who is Responsible?** | **Review Frequency** | **Review Date** | **Review Finding**  |
| ISO 14001 | Environmental management systems - Requirements for use | Specifies the EMS requirements including those for establishing, implementing and maintaining environmental aspects |   |   |   |   |
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