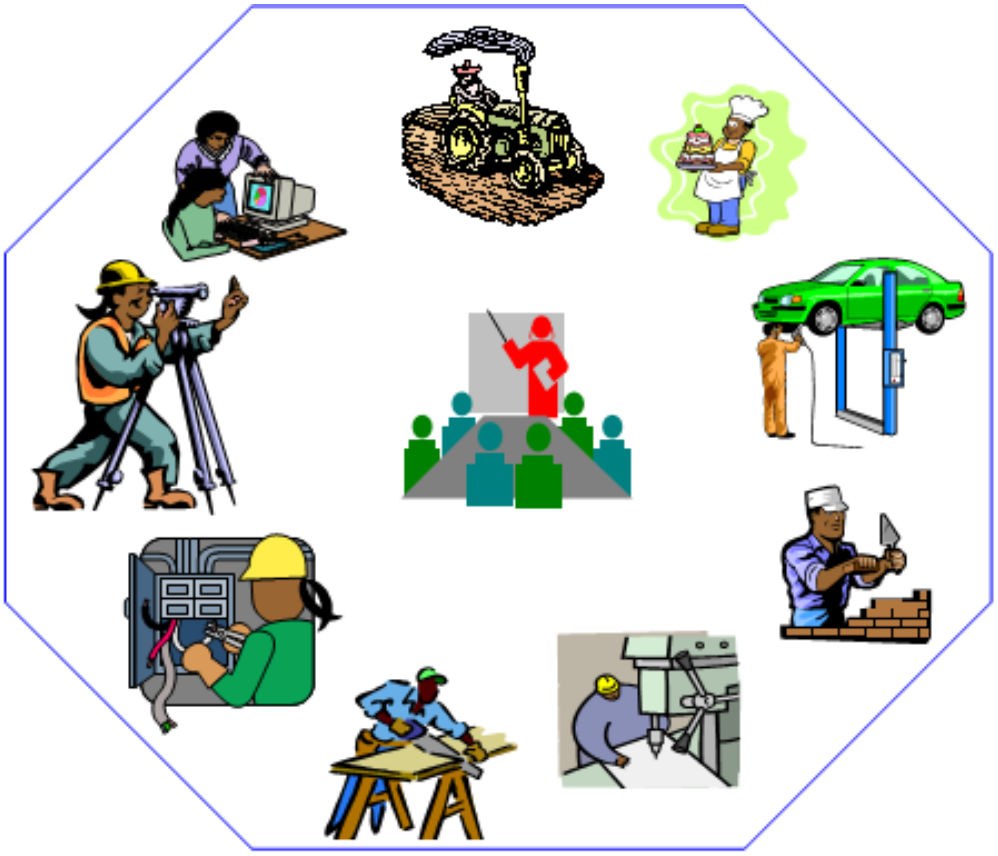
Surface Mining

Level II

Based on Version 2

December, 2018 OS and April 2021, V1 Curriculum



Module Title: Participating in Environmentally Sustainable Work Practices

LG Code: MIN SMN2 M14LO (1-3) LG(53-55)

TTLM Code: MIN SMN2 TTLM 0421v1

April,2021

Adama, Ethiopi

Table of content

LO #1 Identify current resource use 3

Information Sheet 1- Identifying workplace environmental and resource efficiency issues 4
Self-check 1 10
Information Sheet 2- Identifying resources used in own work role 11
Self-Check -2 13
Information Sheet 3- Documenting and measuring current usage of resources using appropriate techniques 14
Self-Check – 3 19
Information Sheet 4- Recording documentation measuring current usage 20
Self-Check – 4 23
Information sheet 5 Identifying and reporting workplace environmental hazards. 24
Self-Check – 5 26

LO #2 Comply with environmental regulations 27

Information Sheet 1- Following workplace procedures to ensure compliance 28
Self-Check – 1 31
information Sheet 2 Reporting breaches or potential breaches 32
Self-Check – 2 33
Information Sheet-3 34
OHS issues and requirements 34
Self-Check -3 45

LO #3- : Seek opportunities to improve resource efficiency-46

Information Sheet-1 47
Following organizational plans 47
Self-Check -1 49
Information Sheet-2 504
Self-Check -2 53
Information sheet 3- skills to select and use technology 54
Information sheet 4-Improving environmental practices and resource efficiency .. 61
Self-Check -4 63
Written Test 63
Self-Check -5 66
Reference Materials 67

LG #53	LO #1 Identify current resource use

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying workplace environmental and resource efficiency issues
- Identifying resources used in own work role
- Documenting and measuring,current usage of resources using appropriate techniques
- Recording documentation measuring current usage
- Identifying and reporting workplace environmental hazards

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify workplace environmental and resource efficiency issues
- Identify resources used in own work role
- Document and measure current usage of resources using appropriate techniques
- Record documentation measuring current usage
- Identify and report workplace environmental hazards

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If your performance is satisfactory proceed to the next learning guide,

Information Sheet 1- Identifying workplace environmental and resource efficiency issues

1.1. **Identify Environmental and Resource Efficiency Issues**

Many organizations are finding that they can save costs and create a competitive advantage by reducing their greenhouse emissions. The environmental performance of products and services has become a key issue in today's business environment.

Organizations are investigating ways to improve their environmental performance. This can often be achieved through better resource efficiency.In order to reduce the impact our daily activities have on the environment, it is important to understand some of the key environmental and resource efficiency issues. The specific issues that are relevant for your organisation will vary depending on its core business. In general, however, all businesses will seek to improve their environmental performance, minimise environmental risks and use resources and materials more efficiently in daily processes.

Environmental and resource efficiency issues will vary depending on the industry, organization and activities conducted.

However, some of the issues that you may face include:

- Maximizing opportunities to improve business environmental performance.
- Minimizing environmental risks.
- Promoting more efficient production and consumption of natural resources, for example minimizing waste by participating in or using a waste management system. Using resources efficiently such as material usage, energy usage (seeking alternative sources of energy or energy conservation) or efficient water usage.

1.2. Resource Efficiency

Resource efficiency looks at energy, water and material use and waste generation.

a) Energy Use: - reducing energy consumption can lead to cost savings and a reduction of greenhouse emissions generated from burning fossil fuels. You can save energy by:

- Turning off lights and equipment when not in use.
- Using power saving functions on office and site equipment.
- Using efficient motors.
- Using efficient lights.
- Installing skylights.
- Keeping heating at 20 degrees Celsius.

- Insulating rooms
- Minimizing the use of hot water.
- Using alternative energy sources.

The strategies used will depend on the activities the business participates in, the type of industry, and the resources and

b) Water Use

You can save water by:

- ✓ Comparing your water usage to others and make adjustments where needed.
- ✓ Fixing dripping taps.
- ✓ Fixing leaking pipes.
- ✓ Avoiding using water wherever possible.
- ✓ Investigating ways to use or treat wastewater.

You may also be able to save water by using alternative treatments or chemicals for production purposes.

c) Material Use

To improve the way you use materials, you could look at:

The way packaging is used

- ✓ Using materials that produce less waste.
- ✓ The environmental standards of your suppliers.
- ✓ Using recycled materials. Using products designed for long life.
- ✓ Avoiding buying products or services that have a high risk.
- ✓ Only storing materials that you need.
- ✓ Storing all materials in designated areas.
- ✓ Keeping stored materials labeled.
- ✓ Keeping storage areas clean.
- ✓ Ensuring storage containers are sealed.
- ✓ Keeping spill kits in chemical storage areas.

The procedures in your workplace will depend on the types of materials that are used.

Dangerous or hazardous goods will have strict procedures regarding their use,storage and dispos

Environmental sustainability So much of what we buy, do or use every day has an environmental impact or effect. Using chemical in mining, electricity in our mining site and makes an impact on the environment. In our modern lives, it is not realistic to expect that we stop using chemicals completely. But we can start to use them in a way that reduces their environmental impact. If something is environmentally sustainable, it can be continued to be used at a certain rate, without interruption. Environmental sustainability means that something can be used or produced without

affecting the ability of future generations to either have the same thing, or enjoy the natural environment from which it came or where it was used. Sometimes environmental sustainability means taking things from the natural environment at a slower rate.

Examples of environmental workplace initiatives include:

• using less paper by printing on both sides
• using less electricity by adjusting computer settings and turning machines off overnight
• using less fuel for transport by adjusting travel requirements
• introducing paper recycling schemes
• encouraging staff to use washable cups rather than disposable ones
• donating office equipment to other organisations rather than throwing it away when it is upgraded.

Environmental and resource efficiency issues Environmental and resource efficiency issues revolve around an organisation's efforts to maximise its performance while minimising its waste and environmental impact. Improving environmental performance may be done as part of good practice (since it often reduces costs), from a desire to improve the environment or to improve relations with employees, customers, local communities and the general public. Here are some ways organisations may seek to improve business environmental performance.

Ways for organisations to improve environmental performance:

- Comply with relevant laws and regulations, such as how to dispose of waste.
- Reduce environmental footprint – the amount of land that must be regenerated to make up for the resources consumed to carry out the organisation's activities.
- Reduce greenhouse gas emissions – emissions of gases such as carbon dioxide that are a by-product of energy and fuel used in our daily activities.

a) Use less resources Using less resources

whether renewable or not, will reduce environmental impact and also generally save the organisation money. A few of the many ways an organisation may reduce resource use are listed below.

Use office equipment with power-save modes that reduce electricity use.

• Use dishwashers and washing machines that use less water, or choose the eco settings for each wash.

• Install compact fluorescent light bulbs instead of traditional incandescent bulbs; they are more expensive, but last longer and use less electricity.

• Encourage double-sided printing to reduce paper usage and using printed paper for scrap notebooks.

b) Extended waste management hierarchy

An extended waste management hierarchy includes steps to prevent excessive waste and can be applied in any workplace. These steps are outlined below.

c) **Waste Generation**

In regards to waste generation, it is important to remember the 3 R's:

- Reduce
- Reuse
- Recycl

Avoid	Choose products with less or no packaging. Choose products that are more efficient in their energy or water needs. Avoid disposable products like cups and bags.
Reduce	Use low energy settings on all equipment. Only use washing machines or dishwashers when there is a full load. Use cold water settings. Store information electronically rather than as paper copies. Circulate one document for review.
Re-use	Re-use paper printed on one side. Request suppliers deliver using re-usable pallets. Donate surplus materials/equipment to community groups.
Recycle	Recycle paper, plastics, steel, aluminium cans, biodegradable food scraps or any other materials accepted by your local council or waste contractor.
Recover	Use materials that have been recycled; for example, bricks or doors recovered from one building site may be used in another.

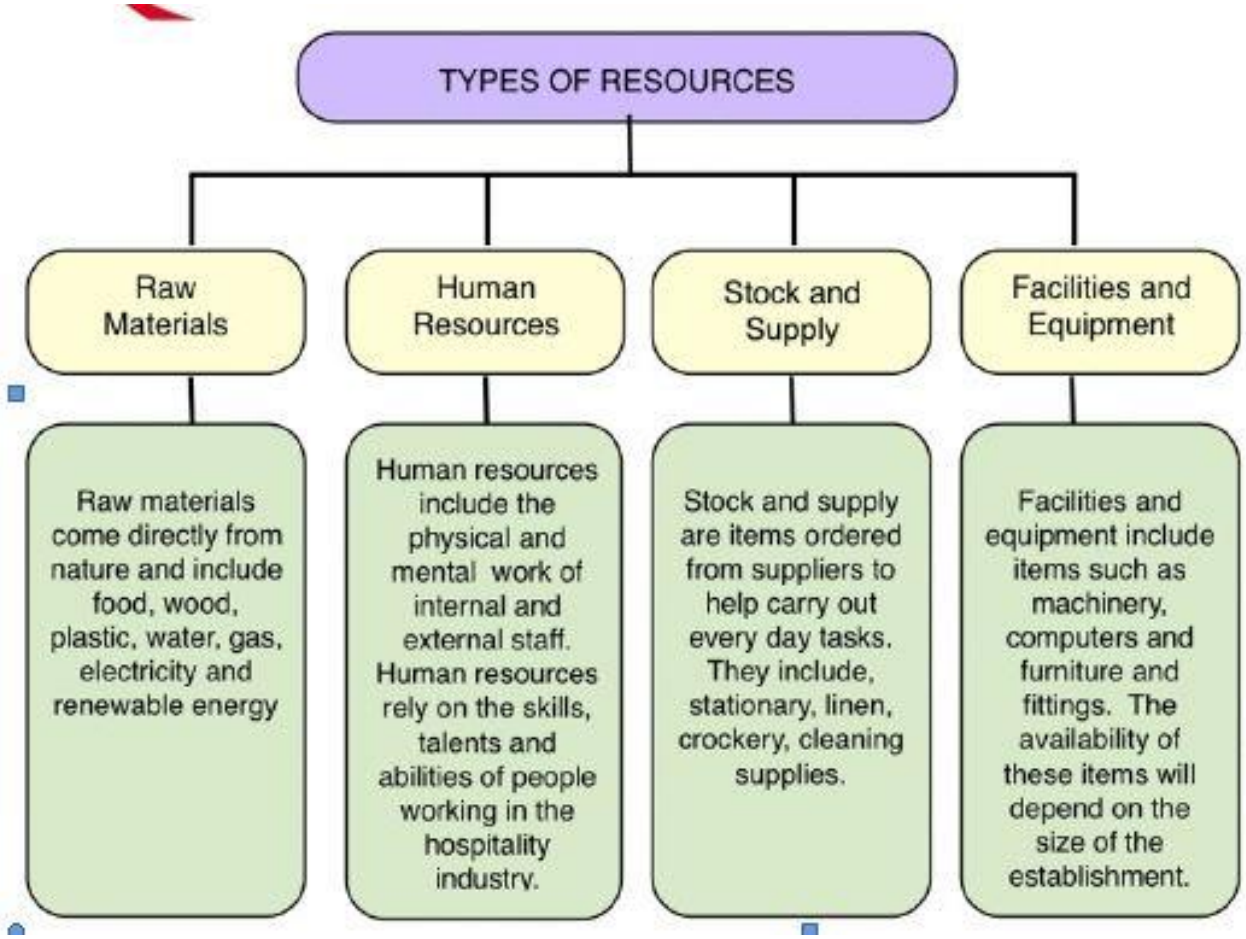


Fig types of resources

Self-check 1	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write at least four examples of environmental workplace initiatives (4points)
2. Write the important environmental and resource efficiency issues.(3 points)
3. What are the types of resources used to sustain environment (3point)
4. How can you save water as a resource (4)

You can ask you teacher for the copy of the correct answers.

rating-5 below 5-unsatisfactor

Score = _____

Rating: _____

Information Sheet 2- Identifying resources used in own work role

It's important to remember that environmental sustainability is everyone's responsibility no matter where you sit in an organisation. The first step is to think about how you use resources and understand, and how you can improve or change what you do to reduce the risks to the environment.

This will involve measuring, in some way, the impact your work has on efficiency, consuming resources, generating waste etc, and finding out what changes you can make to everyday tasks. You might have a plan in your organisation that can guide you, so you'll need to be aware of what others and your organisation are already doing for sustainability. and you'll need to help out by suggesting improvements to use resources more efficiently, and report environmental hazards that need to be dealt with.

There are improvements that can be made to work practices at an organisational level but there are also those that you can identify and act on in your immediate work area.

In a team-based work environment, there may be forums and other ways you can share the issues you have identified with others and make suggestions for improvements.

If you identify opportunities for improvement - you can make suggestions to the Environmental & Sustainability Officer. If your workplace does not have a dedicated Sustainability Officer - you should suggest them to your supervisor.In your workplace there are probably opportunities to use resources more effectively but first, you need to identify environmental and resource efficiency issues which could include:

- usage of natural resources eg electricity, water and gas
- the volume of material usage
- waste management system.

Once resource efficiency issues are identified, you can suggest methods for improving your organisation's environmental performance.

There are improvements that can be made to work practices at an organisational level but there are also those that you can identify and act on in your immediate work area. In a team-based work environment, there may be forums and other ways you can share the issues you have identified with others and make suggestions for improvements.

You should look to identify possibilities for improving environmental and resource efficiency within your own work role. This includes being familiar with the environmental hazards and resources used. You, as a worker, are the closest and most familiar on a daily basis with the materials, products and equipment you use.

Whatever your role in the organization, there is an effect or product that results from what youdo. Resources are all the materials and energy that go in to producing that effect or product.the resources used may include plant and machinery.They also include lights, office and mining equipment, stationery, raw materials, chemicals and other products.

When identifying the resources used, also consider the secondary resources. These are the tools and equipment that are required for you to do your job. Secondary resources may include toilet facilities, lunchroom facilities or showers

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next

1. What is resource (2point)

2. How can we identify possibilities for improving environmental and resource efficiency in your role?(3 points)

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**
You can ask you teacher for the copy of the correct answers.

Score = _____

Rating: _____

Information Sheet 3- Documenting and measuring current usage of resources using appropriate techniques

3.1. Document & measure resources

Identifying, documenting and measuring resource usage is often called "**auditing".**When you have identified some of the resources that you are using in your workplace you can start to identify the current level of usage and recording your findings.

The first step

to talk to your manager and colleagues and find out if there is existing documentation on measuring resource usage such as electricity bills or paper supply invoices.Your workplace may have tools, such as digital power meters, to measure energy use for machines or appliances or existing checklists and records.

Once you have identified the resources used, you will need to calculate a usage rate. This will provide a basis for tracking and monitoring your progress towards becoming more efficient. Some resource usage may be readily available by reviewing supplier invoices. Current water and electricity bills provide usage rates that can easily be compared over time. To determine your organization's current resource use, you will need to conduct an assessment. Firstly, you will need to determine what resource usage you are going to look at.

The next step is to determine how you will measure the resources use. You can either:

- Conduct a desktop assessment
- Conduct a physical assessment.

A desktop assessment will involve reviewing reports and records you will need to determine which records can provide you with the information needed to determine energy usage. The records needed may include:

- Purchasing logs.
- Receipts.
- Water or energy bills.
- Waste bills.
- Equipment lists and specifications.

A physical assessment will involve physically counting items or observingemployees. You may want to undertake a workplace inspection.

Appropriate techniques to resource usage may include but not limited to:

- examining and documenting resources in work area
- examining invoices from suppliers
- examining relevant information and data
- measuring resource usage under different conditions
- reports from other parties involved in the process of identifying and implementing improvements

3.2.Resource Use, Waste Generation and Efficiency Profile

The purpose of establishing your resource use, waste generation and efficiency profile is to collect and analyze baseline data for your premises. This baseline data can then be used to identify an appropriate efficiency indicator and track your progress as you implement your environmental strategies.

There are five steps in the process

- Step 1 – Collect data
- Step 2 – Analyze data
- Step 3 – Establish a baseline period
- Step 4 – Identify activities
- Step 5 – Estimate resource use and waste generation for the key activities.

Step 1 – Collect Data

To undertake this assessment, you need to collect the following information:

- The quantity of resources used by type
- The quantity of production or activity at the site by type
- The quantity of waste generated by type
- The quantity of greenhouse gas emissions associated with each input and output
- If possible,a separation or estimation of the amount of water used for fire testing.

Where possible, this data should be collected over a 2-year period and recorded on a monthly basis. Having monthly data collected over this timeframe will help you identify seasonal trends.

Step 2 – Analyze Data

Look for patterns in your data and consider the seasonal aspects that affect your resource use or waste generation. If your data allows, look for variations within weeks to identify trends on a weekly basis as well as on a monthly basis.

Compare the resource consumption and waste generation to your business activities. Some industries have resource efficiency indicators that are already set.

Step 3 – Establish a Baseline Period

Using the information collected, you will need to establish baseline data. This is the data you will use to evaluate your improvements against. The data you use should be current (i.e. no more than 2 years old) and contain at least 12 months data.

The baseline data needs to be reviewed against your 2-year period data. You need to determine if it represents a typical year at your workplace. If not, you should indicatewhy and estimate what a typical year will look like.

Step 4 – Identify Activities

When analyzing your data, it is preferable to divide it by activities at your workplace rather than departments or sections.Use of resources and the waste generated is usually relevant to particular activities so this will give you more accurate information to work with. You will need to start by listing all the common activities.

Step 5 – Estimate Resource Use and Waste Generation for Key Activities

As the use of resources and the wastes generated are often inter-related, you should firstly undertake an integrated mass and energy balance for the whole site.When estimating the resource use and waste generation for each activity, remember these key principles:

Sum (individual activity resources/wastes) = Total resource/wastes

Sum (inputs) = sum (outputs)

Example Measuring electricity usage

A kilowatt-hour is the typical way that electricity is measured. A kilowatt (kW) is 1,000 watts and refers to the use of a device that uses 1,000 watts for an hour. To find out the number of hours an appliance or machine must run to make 1kwh, divide 1000 by the wattage of the appliance or machine.

Example 1: 100 watt light bulb

1000/100 = 10. Therefore a 100 watt bulb used for 10 hours equals 1 kwh.

Example 2: 10,000 watt machine

1000/10,000 = 0.1hr = 6 minutes. Therefore a 10,000 watt machine operated for 6 minutes equals one kwh.

Self-Check – 3	Written test

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

Test I: Short Answer Questions

1. Demonstrate the five steps ofresource use, waste generation and efficiency profile (5 points)
2. What are the appropriate techniques to resource usage (4 points)

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Score = _____

Rating: _____

Information Sheet 4- Recording documentation measuring current usage

4.1 Record and file documentation measuring current usage

Organizations record information, create documents and file them for future use as part of daily business activity. Filing can be one of the most frustrating jobs for any employee, but when it is done in a structured way it can be done quickly and save a lot of time when a document is required in the future. You need to select the most appropriate method for recording information based on what you are recording, the nature of your organisation and any particular procedures and guidelines that already exist. You need to ensure you familiarize yourself with your organisation's requirements.

4.2. Importance of record and file documents

The previous section explained the importance of measuring resource usage. This is because it helps provide information on how effectively an environmental initiative has reduced resource usage, identifies opportunities for improvement and helps us understand any cost savings. It is important that this data is recorded and filed for future access. Some reasons for this are listed below.

Compliance

There may be workplace policies and procedures in place that require this data to be collected and stored for a period of time.Often these procedures are to support legal requirements, so it is important that the records are kept and stored for audit purposes

Record usage

How often you collect resource usage data will depend on the type of document you use to record your information.Generally, if you are collecting data regularly, it is most useful to record that data in a database format, whether in a spreadsheet or a database.It is helpful, though notnecessary, to name date columns with numbers, rather than text, as this helps keep them in order in some applications. For example, if you sorted months alphabetically your list would start with April, August, December – and end with September.Putting the year before the month means that it is easier to compare the same month in different years without confusion. How you structure your table will depend on how you wish to present your data. For future analysis, it is helpful to keep one master table that summarises the key information and then select different fields to create any graphs or diagrams. If data is stored in several places, it's much harder to analyse results.

File documents

Documents are filed so that they can be easily accessed at a future date, whether for further business use or for legal compliance requirements. Filing can be done either electronically or in hard copy. Files are increasingly being stored electronically, as this is much simpler for organisations to manage and it is easier to control access.

Self-Check – 4	Written test

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

1. **What are the reasons to file a document (6point)**
2. **Why record and file documents?(4 points)**

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answer

Score = _____
Rating: _____

Information sheet 5 Identifying and reporting workplace environmental hazards

5.1 Workplace environmental hazards

Workplace environmental hazards include noise pollution, air pollution, chemicals, dust, fumes and disposal hazards.

When considering what environmental hazards might exist in a workplace, think about what might happen if things go wrong. For example, storing chemicals may not be a significant environmental hazard, but a leak or spill can create a more significant hazard. Therefore, when assessing environmental hazards, you should think about all possibilities, not just what happens in daily business. Here are some examples of workplace environmental hazards.

a) **Noise pollution:** Prolonged periods in a noisy environment can cause damage to hearing such as tinnitus (ringing in the ears) or permanent hearing loss. This can occur in manufacturing and mining environments, for example. If you work in such an environment, you may be required to use protective equipment such as ear plugs or ear muffs to protect your hearing.

b) **Air pollution Air pollution:** can come from many sources, the most common being general smog levels, vehicle emissions and industrial emissions. Air pollution can cause a range of health problems including eye and throat irritations or more severe conditions such asbronchitis.

c) **Chemicals:**There are many potentially hazardous chemicals used in workplaces. These include corrosives such as sulphuric acid and caustic soda, irritants such as ammonia, and sensitising agents. Exposure can cause skin disease, poisoning or respiratory illness. These chemicals must be handled using the appropriate procedures and protective equipment.

d) **Dust and fumes:** Dust and fume hazards can be created in a variety of ways and may result in respiratory concerns. Most people are aware of the risks when handling lead or asbestos but some timbers, other building materials, paints and cement can also potentially affect your health and the environment. Be sure to use the appropriate protective equipment.

e) **Disposal hazards:** There are regulations for the correct disposal of many chemicals and other potentially hazardous materials. It is not appropriate to pour some chemicals down the sink or to throw some things, like batteries, into general rubbish. These materials are usually clearly marked and you should follow instruction carefully.

Self-Check – 5	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write the defence between risk and hazard (4 points)
2. Write examples of workplace environmental hazards(6points)

You can ask you teacher for the copy of the correct answers.

Score = _____
Rating: _____

LG #54	LO #2 Comply with environmental regulations

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Following workplace procedures to ensure compliance
- Reporting breaches or potential breaches
- OHS issues and requirements

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, **you will be able t**o learn

- Follow workplace procedures to ensure compliance
- Report breaches or potential breaches
- OHS issues and requirements

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
3. Accomplish the “Self-checks” which are placed following all information sheets.
4. If your performance is satisfactory proceed to the next learning guide,
5. If your performance is unsatisfactory, see your trainer for further instructions or go back to “information sheet”

Information Sheet 1- Following workplace procedures to ensure compliance

1.1 Complying with environmental regulations

Compliance is about meeting the requirements of accepted practices ,legislation , prescribed rules /regulations , specified standards , or the terms of a contract . Businesses must comply with environmental standards to ensure sustainability.

Legislation and Compliance

Compliance is acting in accordance with rules or standards.

An act is a written law passed by Parliament.

A **regulation** is a rule or directive made and maintained by an authority. rules designed to control or govern conduct.

A code of practice is a set of rules or standards which have been designed in accordance with legislation and regulations, and are enforced by local government agencies. Is also written guidelines issued by an official body setting out recommended or preferred processes, actions or organizational structures to be applied in a given setting. Law - legislation passed by governments which is enforceable by courts. Best practice - methods and techniques that have consistently shown superior results which
are used as benchmarks .

Compliance may include but not limited to:

- meeting relevant laws, by-laws and regulations or best practice to support compliance in environmental performance and sustainability at each level as required (such as Environmental Protection or Biodiversity Conservation Act):
  - international
  - local government
  - Industry
  - organization

Environmental impacts of Artisanal mining

This part provides information about the environmental impacts posed by the Artisanal mining, including but not limited to:

- Deforestation/vegetation clearing
- Loss of top soil and vegetation
- loss of agricultural /farm land
- Diversion and Siltation of water bodies
- Water pollution
- Erosion and landscape change
- Land slide, rock falls/ collapse
- Pits and trenches exposed to different uses
- Waste generation (solid and liquid)
- Pressure on local resources (e.g. use of water and land etc.)
- Radiation due to the composition of the ore containing radioactive elements (e.g. Tantalite)
- Noise and Dust due to crushing
- Health and safety problems

Mitigating measures

This section provides information about the mitigation measures for impacts posed by the Artisanal mining, including to:

- Properly designed quarry face opening and management
- Minimize the number of trees cleared and re-vegetation
- Stoke pile the top soil and immediately proper back filling of dug pits and trenches
- Proper reserve estimation by the appropriate authority before mining/extraction activity
- Restriction of mining activity only to the proposed reserve estimated area keep the natural course of water and avoid disposal of mine waste to water bodies
- apply proper mining methods but if prone to Erosion build terracing
- Minimize waste generation at the source of mining
- Controlling and formalizing the influx of illegal miners

- Proper provision of health and safety equipment before and during mining activities;
- Use of Personal Protective Equipment and water spraying during crushing and grinding
- Health and safety problems data compilation and reporting immediately to the concerned authority
- Awareness creation for artisanal miners and local peoples
- Trained on environmental protection activities
- The artisanal miners will be allocate budget for environmental management
- The artisanal mining activities should bear in mind to follow the legal requirement that the allowed vertical excavations only up to a depth of 15 meters and not to carry out tunneling and other underground works.

Self-Check – 1	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe the following words:-
a. Compliance (2point)
b. Best practice (2point)
c. a regulation (2point)
d. an act (2point)
2. List environmental impact of artsanal mining?(3 points)
3. List mitigation methods?(2 points)
4. what are work place compliances (4points)

Note: Satisfactory rating – 8 points Unsatisfactory - below 8 points

You can ask you teacher for the copy of the correct answers.

Score = _____

Rating: _____

information Sheet 2 Reporting breaches or potential breaches

2.1 Report breaches and potential breaches

Once you have identified a breach or potential breach, you should report it to the appropriate personnel. This can be difficult when you have identified a breach or potential breach performed by another employee. Most people do not like to feel like they are creating trouble for their peers or colleagues.However, you must remember that breaches can put you, other employees or the environment at risk. In some cases, they may also affect the organization's compliance with external laws and regulations.

Who to report to

How you should report the breach or potential breach will depend on your organization's structure. You should find out who in your organization is responsible for managing breaches or potential breaches of workplace procedure, particularly those relating to environmental regulations. Your organization may have an environment officer who has responsibility for the whole organization or there may be a representative in each department whoreports to the environment officer. The person responsible for workplace health and safety may also have responsibility for environmental hazards and breaches.In smaller organizations, this role may not be specifically assigned, requiring youto report it to the owner or manager.Different breaches may need to be reported to different people, particularly in larger organizations. Your supervisor should be able to advise who a breach is reported to. Even if you report it to another supervisor or manager, you should still in form your supervisor.

Things that might affect who you report a breach to include:

•Where the breach occurred, which will affect if you tell your supervisor or one in another area.

• The time at which the breach or potential breach was observed and who is available to report it to

• Whether it is an actual breach that is currently occurring and represents a risk, or a potential breach that requires preventative action.

Self-Check – 2	Written test

Name…… ID…… Date…….

Directions: *Directions: Answer all the questions listed below. Use the Answer sheet provided in the*

next page:

1. How you should report the breach or potential breach's(3points)
2. Write the things that might affect who you report a breach.(3 points)

Note: Satisfactory rating - 3 points Unsatisfactory - below 3 points

You can ask you teacher for the copy of the correct answers.

Information Sheet-3	OHS issues and requirements

Occupational Health and Safety in Residential Aged Care: First Steps has been designed to assist you, as staff working in small aged care facilities, to improve your management of Occupational Health and Safety, and to meet the OHS requirements for the accreditation of your facility.

To help you meet the OHS requirements for accreditation we have cross referenced First Steps with these documents. In particular, if you complete the self-assessment checklist contained in First Steps this will assist you to complete the OHS related criteria in the worksheets of the Application Kit for Accreditation.

Throughout First Steps the relevant Expected Outcomes from the Standards and Guidelines have been quoted to provide you with the links between OHS and the Standards and Guidelines. Section 5 pays particular attention to accreditaion.

(Of course there are many other requirements for accreditation besides the OHS ones. You will still need to be working with the Standards and Guidelines to make sure you meet all those other requirements as well.)

In summary, First Steps can help you:

• implement priority Occupational Health and Safety (OHS) management systems

• address the major hazards facing aged care facilities

• reduce work related injuries and illness (and associated costs)

• meet the OHS requirements of accreditation

First Steps is designed as a management guide for owners, employers, directors, managers and employees of small aged care facilities who are involved in the process of reviewing and improving OHS. First Steps also aims to assist you to reduce accidents and the human and economic costs of work related injuries or illness.

First Steps outlines simple steps you can follow to improve the management of OHS and prepare your facility to meet the OHS requirements for accreditation. Flowcharts are used to summarise the major steps required, with more information included in the text. You may also use the flowcharts to develop your facility's OHS procedures (if required).

First Steps also includes a number of sample tools (i.e. checklists and forms). They may be used in their current form or adapted to meet the needs of your facility. They occur throughout First Steps immediately after the section in which they are discussed. The development and systematic use of well designed checklists and forms is a central element in an effective OHS program.

In the final sections of First Steps you will also find contacts for further information and a range of Fact Sheets which may be used to inform staff or further develop OHS.

Factors affecting effective OHS

To be effective OHS must be integrated into the day-to-day operations of your facility. Its success will depend on 5 major principles:

• leadership demonstrated by managers
• employee participation
• designing better environments
• training and communication
• continuous improvement

Let's consider each of these in turn.

Leadership Leadership and commitment from senior management must be visible.

This requires managers to:

• allocate resources
• allocate responsibility, authority and accountability
• plan and follow through decisions
• assess performance and implement continuous improvement

• regularly review OHS
• integrate OHS into all decision making
• consult with employees
• develop written policies and procedures

Employee participation

Consultation with employees/health and safety representatives is a requirement of each State's OHS Legislation. Employee participation is crucial for you to achieve a successful and effective OHS program.Some reasons why consultation and participation are likely to lead to a successful program are:

• people are more likely to change if they are involved in the process
• common goals can be identified when working together
• participation can provide a more fulfilling role for employees
• employees have detailed knowledge of any hazards in their work and often have ideas of how problems can be solved

Designing better environments

To design better environments you need to consider OHS:

• prior to designing new facilities or redesigning current facilities
• when making decisions to purchase new equipment
• restructuring your staffing arrangements
• when identifying, assessing and controlling risks

Training and communication

OHS should be part of all training. When training new staff you should include workplace OHS policies and procedures, quality expectations, and similar OHS issues.

Communication with employees on OHS issues is crucial to:

• raise awareness of OHS
• ensure people know what they are required to do
• encourage the exchange of ideas
• update people on changes and procedures

Continuous improvement

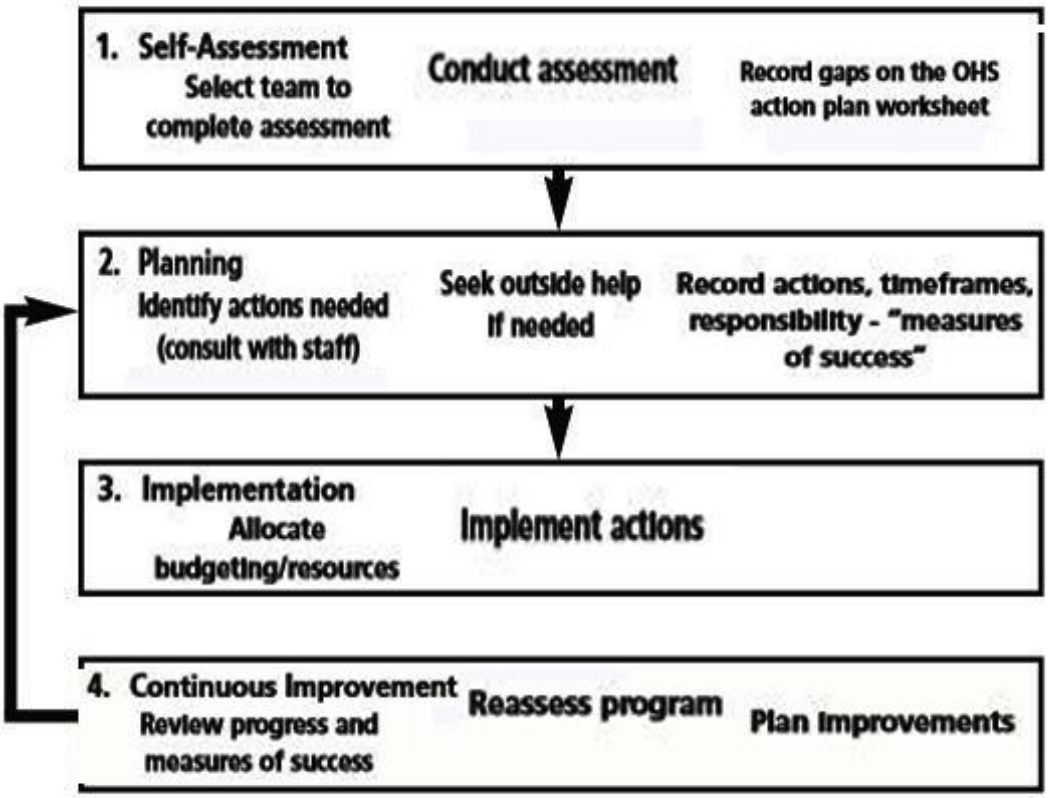
Continuous improvement is an essential component of an effective OHS program. This involves you and your staff constantly asking the questions 'Are we doing it right?' and 'How can we do this better?'.

Effective OHS requires 4 major steps. These steps are common to many projects, and you will recognise them from other activities at work and home.

These steps can be summarised as:

1. Self-assessment
2. Planning
3. Implementation
4. Continuous improvement

More detail about each of these steps is included in flowchart



Flowchart Planning for effective OHS

1.self-assessment

The first step is to select a team to review your facility's current performance in OHS to identify achievements and any gaps.

The team may include the Director and Health and Safety Representative [HSR] if one is elected, or the OHS Committee [if one is in place] or with one or more employees.

Once your team is selected, it should inform all staff about the review prior to commencing and invite them to be involved. As we have seen, employee participation is a major principle of effective OHS.

Form: The Self Assessment checklist on the next page will guide your team through the process of assessing OHS. The form includes the major OHS requirements, but you will need to review your State OHS legislation to make sure you comply with all requirements.

Answering the questions in Form will require you to review physical locations, policies and procedures, meeting minutes, incidents and hazard reports and any other documentation to provide evidence for your answers. Record relevant information in the comments section of the checklist

Sample Checklist for Self Assessment against OHS related Expected Outcomes of the *Standard and Guidelines for Residential Aged Care Services*

	Yes	No	Comments
1. Continuous improvement (expected outcome 4.1)			
a) Does your facility have an OHS plan?	❑	❑	
b) Is OHS information (such as hazard/incident reports, maintenance reports and minutes) collected and used as the basis of review/planning?	❑	❑	
c) Is there a budget allocation for OHS?	❑	❑	
d) Does your facility have a written OHS policy?	❑	❑	
e) Does the policy include responsibilities of employees and managers?	❑	❑	
f) Is there a written rehabilitation policy?	❑	❑	
g) Are OHS policies and procedures reviewed regularly?	❑	❑	
2. OHS legislation (expected outcome 4.2)			
a) Is your facility aware of State OHS legislative requirements?	❑	❑	
3 Managing hazards (expected outcome 4.5)			
a) Are inspections of the whole workplace conducted regularly using purpose designed checklists?	❑	❑	
b) Does your facility have a system for reporting hazards?	❑	❑	
c) Are there planned proactive programs to address:			
• Manual handling?	❑	❑	
• Slips, trips and falls?	❑	❑	
• Client aggression?	❑	❑	
• Hazardous substances?	❑	❑	
• Plant and equipment?	❑	❑	
• Fire security and other emergencies? (expected outcome 4.6)	❑	❑	
• Living environment? (expected outcome 4.4)	❑	❑	
• Infection control? (expected outcome 4.7)	❑	❑	
d) Have risk assessments been carried out on all identified hazards and hazardous tasks?	❑	❑	
e) Are reports/hazards followed up and actioned (controlled)?	❑	❑	

4.Managing hazards

a) Are inspections of the whole workplace conducted regularly using purpose designed checklists?	❑	❑
b) Does your facility have a system for reporting hazards?	❑	❑
c) Are there planned proactive programs to address:		
• Manual handling?	❑	❑
• Slips, trips and falls?	❑	❑
• Client aggression?	❑	❑
• Hazardous substances?	❑	❑
• Plant and equipment?	❑	❑
• Fire security and other emergencies? (expected outcome 4.6)	❑	❑
• Living environment? (expected outcome 4.4)	❑	❑
• Infection control? (expected outcome 4.7)	❑	❑
d) Have risk assessments been carried out on all identified hazards and hazardous tasks?	❑	❑
e) Are reports/hazards followed up and actioned (controlled)?	❑	❑

5. Managing hazards (expected outcome 4.5)

a) Are inspections of the whole workplace conducted regularly using purpose designed checklists?	❑	❑
b) Does your facility have a system for reporting hazards?	❑	❑
c) Are there planned proactive programs to address:		
• Manual handling?	❑	❑
• Slips, trips and falls?	❑	❑
• Client aggression?	❑	❑
• Hazardous substances?	❑	❑
• Plant and equipment?	❑	❑
• Fire security and other emergencies? (expected outcome 4.6)	❑	❑
• Living environment? (expected outcome 4.4)	❑	❑
• Infection control? (expected outcome 4.7)	❑	❑
d) Have risk assessments been carried out on all identified hazards and hazardous tasks?	❑	❑
e) Are reports/hazards followed up and actioned (controlled)?	❑	❑

What to do with the self-assessment results (planning)

Any 'no' answers recorded when filling in your Self-assessment checklist (Form 2.1) demonstrate a gap in the OHS system and the need for improvement. Record these on Form 2.2-Action plan worksheet (see next page). This worksheet is based on those in the Application Kit for Accreditation. You will need to document the actions required, what your outcome (or improved result) will be, who is responsible for the actions and the timeframe. The remainder of First Steps will help you decide on the actions required.

It is vital to involve staff in the planning process in order to achieve successful outcomes (and meet the legal requirements for consultation). Discuss the required actions with employees and their representatives. Record the actions on the OHS action plan worksheet (Form) (or your own action plan if you already have one).

Next you will need to decide who will be responsible for the tasks, and timeframes. Record these also on Form Obtain outside help for carrying out tasks, if needed.

Refer to the relevant State OHS Legislation while developing the action plan to ensure legislative compliance and to meet Expected Outcome of the Standards and Guidelines for Residential Aged Care Services.

You may need to include short and long term objectives in the plan. Some may be completed within one month while others require one or even two years.

Next you will need to decide what resources are needed to implement the plan.

Determine how you will measure the success of the plan; for example, through better reporting of hazards, regular maintenance of equipment, reduction in injuries. This will require the development of ‘measures of success’ such as ‘90% of equipment checked by the due date’. Record these measures of success in the ‘What will be the improved result?’ column of the action plan (Form).

You will also need to prioritise activities recorded on your action plan, so that you start by addressing priority hazards first.

For effective prioritisation you will need to take into account:

- the particular needs of your facility
- your major hazards
- legislative compliance
- resource/budget requirements
- training and staff development needs

Form Sample OHS Action Plan Worksheet

Action required	What will be in improved result?	Relating to expected outcome	Person/team responsible	Date action to be compeleted	Actual date action completed	What was the improved result?
1						
2						
3						

3.Implementation

Now you have an action plan in place the next step is to make it happen.

• arrange any resource/budgeting needs for implementing the action plan

• implement the required actions (if additional information is needed to implement the improvements, contact your employer association, union or State OHS Authority) • provide any required training

• record the “improved result” on the action plan worksheet

4.**Continuous improvement**

To achieve continuous improvement you and your team will need to:

• review progress against the action plan at the OHS committee or staff meetings at regular intervals, for example monthly, to ensure timeframes are being met, that the changes made have been effective and to identify any difficulties in implementing the plan

• reassess your OHS program on a regular basis (e.g. annually), using the selfassessment checklist (Form) and your ‘measures of success’ entries in the ‘What will be improved result?’ column of your action plan

• use the findings to develop an annual OHS plan (continuous improvement) and to complete the worksheets in the Application Kit for Accreditation

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List four Effective OHS requires?(3 points)
2. What actions You take into account For effective prioritisation ?(3 points)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

LG #55	LO #3- : Seek opportunities to improve resource efficiency

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Following organizational plans
- sustainability in the workplace
- skills to select and use technology
- Improving environmental practices and resource efficiency
- Doing work as part of a team to identify possible areas for improvements

Making suggestion for improvements to workplace practicesThis guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, **upon completion of this learning guide, you will be able to**:

- Follow organizational plans
- Sustainable in the workplace
- skills to select and use technology
- Improve environmental practices and resource efficiency
- Do work as part of a team to identify possible areas for improvements

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If your performance is satisfactory proceed to the next learning guide,

Information Sheet-1	Following organizational plans

1.1 Follow plans to improve environmental practice and resource efficiency

An important part of achieving any objective is to develop a plan for achieving it.

When a business has an objective such as improving resource use or reducing their environmental footprint, they must develop a detailed plan to help them achieve In fact, in a business where there may be many people involved in achieving an objective, it is even more important to have a clear plan with supporting procedures, schedules and work plans, so that all employees know what is expected of them. This is called an organizational plan.

An organizational plan is a detailed outline of the work that must be completed for a business to achieve its objectives. Some organizations refer to this as the business plan

a) Develop organizational plans

Some organizational or business plans are developed and updated annually, as part of the regular business planning process. Often, organizational plans are developed in such a way that the work being done throughout the organization is in line with the key objectives.

There are usually several steps to developing the plan:

1. Develop key objectives
2. Develop departmental objectives
3. Develop team objectives
4. Develop individual objectives
5. Documented policies and procedures
6. Work plans to minimize waste or to increase efficiency of resources

such as a green office program, supply chain program for purchasing sustainable products or an environmental management framework

b) Develop key objectives

Key objectives are generally limited to between three and five goals; however, there may be numerous supporting projects to achieve these objectives. Usually completed by senior management, these objectives are generally very high level.Lighting initiatives, such as changing to more efficient forms of lighting or installing sensor lighting in less frequently used work areas Making adjustments to office climates, so that the air-conditioning and heating systems run more efficiently Waste reduction programs.

c) Supply chain programs

The employees responsible for managing purchasing can help reduce the organization's environmental footprint by making environmental issues one of the criteria for their purchasing decisions. Cost, value for money, reliability and product warranty will remain important criteria, but often purchasing items with good environmental credentials will also be financially beneficial. For example, a printer that can print on both sides of the paper and is more energy efficient may be more expensive to purchase, but it will have reduced running costs because it uses less electricity and paper, so it may be cheaper in the long run.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is an organizational plan? (2point)
2. Write the five steps to develop plan (4 points)

Note: Satisfactory rating - 3 points Unsatisfactory - below 3 points

Score = _____

Rating: _____

Information Sheet-2	sustainability in the workplace

2.2.sustainable work practices

Sustainable organizations strive to balance the triple bottom line of people, planet, and profit to achieve long-term success and viability. This means that organizations cannot be sustainable without protecting the safety, health, and welfare of their most vital resource: workers. Sustainability is not just about what is done, but how it gets done. It is a mindset that requires leadership; not settling for second best in any aspect of operations; setting and achieving goals beyond regulatory compliance.

Organizations of all sizes across the country and around the world have embraced this mindset as a way to showcase their values, measure impacts and outcomes, and increase their competitive advantage. However, workplace safety and health is often underemphasized, or overlooked completely. Integrating safety and health into sustainability provides an opportunity to better protect workers and achieve a truly sustainable organization.

Sustainability provides a platform for reimagining and identifying innovative approaches for protecting workers by:

- Creating new partnerships to advance integrated OSH and sustainability activities.
- Enhancing interdisciplinary training and education for workers, the OSH community, and business professionals;

- Measuring the impact of safety and health performance on business outcomes.
- Recognizing employers that successfully integrate OSH into sustainability

efforts,and

- Improving access to data on safety and health for sustainability reporting.

Environmentally sustainable work practices are those things that we do at work that reduce the impact on the environment.

They are choices we make in our workplace; like reducing energy use, saving water, avoiding waste, and making informed choices about goods and services purchased.

An environmentally sustainable work practice is a practice that :

- identifies its key sustainability issues and then procedures to reduce the impacts of these issues
- implements these identified procedures
- monitors and reports on the procedures to ensure they continue and have the most effective outcome and
- reviews the procedures to ensure continuous improvement.

Often workplaces have organisation based environmental improvement programs - which can include Environmental Management Systems & Plans; Energy, Water or Waste management plans; Procurement Policies, Green Office initiatives and more.

Sustainability in the workplace isn't just for the big companies with thousands of employees - it can take place in a business with only a few staff. What business wouldn't want to cut energy usage, cut water usage, and reduce waste disposal costs. Basically being sustainable helps with the business's bottom line. Within this course there are many different areas identified that can be improved within workplaces by making more responsible choices and taking action.

Workplace sustainability policy. ...

- Step 1: Define the scope of your **sustainability policy**. ...
- Step 2: Gather information from a range of sources to plan and develop **policy**.
- Step 3: Identify and consult stakeholders as a key component of the **policy** development process. ...
- Step 4: Include appropriate strategies in **policy**.

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List Workplace sustainability policy.? (2point)
2. how Sustainability provides a platform for reimagining and identifying innovative approaches for protecting workers ?(4 points)

Note: Satisfactory rating - 3 points Unsatisfactory - below 3 points

Score = _____

Rating: _____

Information sheet 3- skills to select and use technology

3.1.skills to select and use technology

Information technology skills are abilities, knowledge and talents related to the use, administration, development, design and management of technology.

Smart mines are on the up, but they are by no means ever-present. This is because there remains a number of barriers to the adoption of new technologies within the mining sector. On the one hand, mines are internally competitive and siloed, so that mines run by the same company compete with each other when it comes to safety, productivity and other measures. The internal politics and lack of cooperation within mining companies hinder the implementation of new technologies, which require concerted efforts from all departments in order to facilitate integration and systems innovation. As individual mines are separate and competitive, each and every mine also has to be convinced separately of the need for new technologies

The mining industry is very traditional, making it risk-averse; this creates a budget barrier to investing in new technologies without a guaranteed return on investment Moreover, mining operators commonly lack trust in cloud services and IoT solutions as they generally have a very protective attitude towards their data. This stems not only from an industry-wide distrust of new technologies but also from negative experiences in the past with large, “reliable” companies, who have, for example, experienced hacking scandals.These barriers are making many mines increasingly less competitive and more costly, as others who take the plunge begin to reap the benefits of digitization. In this article, we will take a quick look at what these benefits are.

1. **Reduce operational costs**

Wireless monitoring can be used to create “smart mines” with much lower operational costs than their “analog” predecessors. Smart mines are essentially those whose key assets are digitized through embedded sensors that relay data to a central system via a wireless network.

As such, mining operators can save money not only on human labor – as people no longer need to physically carry out manual data readings onsite – but also because there is no need for expensive cabling and in turn, cable maintenance. Mines not only save money by cutting out these unnecessary costs: operators that also use an Operational Intelligence (OI) solution as part of their wireless network are better able to predict incidents and more consistently maintain their sites, saving them a lot of money by avoiding incidents which can entirely halt operations for weeks or months on end. Smart mines thus have higher ROI and are more competitive than traditional mines.

2. More easily automate operations

Smart mines with technologies already integrated can more easily automate their operations than those who lag behind on technological adoption. Mining operators can build on their existing wireless network of embedded sensors, for example, through installing automation software that allows them not only to remotely control both static and moving assets, but actually to programme automated interaction between them both. Automated trucks are one great example of this, relying on both the physical network of sensors and the remotely programmed and controlled software to autonomously carry out mining operations that previously needed a fleet of truck drivers. Digitizing a mine in one way – for instance installing a wireless network of sensors to carry out remote readings – can thus facilitate further digitization, like the automatization of key mining processes.

3. Keep the workforce safe

Workforce safety is a major issue for mines, which are often very dangerous places to work for humans. When dams break, for instance, both workers and those living around mines can be harmed or even lose their lives. Workers who carry out manual readings in remote, hard-to-access areas are at particular risk of harm. Automating mobile assets, such as trucks, in mines, and enabling wireless, remote readings removes the need for humans to actually be onsite, massively increasing workforce safety.

Predictive analysis and insights, enabled through OI solutions, also allow mining operators to better foresee and prevent any dangerous incidents, such as dams breaking, from occurring. Workforce-tracking, enabled through wireless-connected wearable devices, also helps operators to coordinate their workers more effectively and, for example, warn them not to go to certain areas of the site if there has been an incident. Smart mines thus hugely reduce the possibilities for human harm in mining processes in the long-term, diminishing the rate of mining incidents through using new technologies as a primary predictive-maintenance tool

Fig open cast Minig site

4. Monitor operational assets

As mentioned above, wireless monitoring and predictive maintenance, enabled through OI solutions, allow mining operators to remotely and constantly monitor operational

assets, like dams, to make sure they are not damaged. Real-time, digital data capturing is gradually replacing costly manual readings of critical operational data such as pore water pressure, the level of which can have a huge effect on assets in a very short space of time. If pore water pressure suddenly spikes, a dam can break very quickly. With manual readings, pore water pressure can only be measured now and again, meaning that a spike could go undetected for too long, putting undue pressure on critical assets such as dams. With real-time digital readings, however, operators can continuously monitor pore water pressure levels, giving them new capacities to implement measures to lower these levels, and in turn protect their key assets and consequently their workers from imminent harm.

5. Ensure long-term maintenance of critical assets

Many components of smart mines, such as wireless embedded sensors and GPS trackers, are both easy to install and easy to maintain. Recording units for wireless monitoring of mines, for example, are generally classified as “ultra-low-power”, meaning that their batteries are equivalent to a single car battery (65Ah@12V) but can provide enough power for over 50 days of continuous operation. The long battery life of smart mining systems means that they rarely have to be attended to. These digital mining components, notably geophysical sensors, are also designed to withstand the often extreme physical working conditions of mines: they need to be able to deal with severe environmental surroundings, varying pit geometries, and satellite configurations, without being damaged or degraded. This makes them both long-lasting and hardy, saving mining operators both time and money on technology systems maintenance.

6. Ensure data security

Mining companies are generally very protective of their data; they need to be in control of this information in case of an incident or accident. Digitization of their mining processes poses risks in terms of hackers getting into the system and controlling the

mine’s operations. Reliable, experienced, smart mining companies generally ensure, however, that a mine’s data is well-protected and secured. One common way of protecting data is through employing on-premise data acquisition systems, which help to avoid a breach because their wireless network of geophysical sensors is concentrated in an area on the site being monitored. Rather than having data “floating” around in a cloud that is located on the internet, these systems aggregate and process their data in servers onsite/near to the site, which are only connected to the network.This means both that hackers cannot reach the network and that the crucial data that operators need to monitor incidents remains within close reach

8 Basic Tech Skills Every Employee Should Have

- Social media savviness. No matter what role you are in, in today's climate it is vital to be social media..
- Spreadsheeting.
- Presentation skills.
- Word processing.
- Touch typing.
- Keyboard shortcuts. ...
- Emailing. ...
- Staying with the times.

Although there are many barriers to mines adopting new technologies, these must be overcome if mining companies want to remain competitive and successful in an increasingly digital age.Smart mines are the future, and they bring multiple benefits. From improving workforce safety, to protecting data, to enhancing productivity and efficiency across the value chain, to reducing monitoring and installation costs, smart mines are revolutionizing mining operations for several companies are we speak.

Failing to innovate by keeping your mine “analog” and continuing to use costly, manual processes, such as manual readings of critical assets, thus puts your company on the back foot when it comes to productivity and therefore its competitive advantage. New technologies like OI solutions and wireless networks might seem like a daunting investment, but they are an essential need for any mine looking to exist in the future. The time to invest is now: you will no doubt see the results in both the short and the long-term.

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1.. Define Information technology skills.? (2point)

2. how Wireless monitoring Reduce operational costs ?(4 points)

3. how Wireless monitoring More easily automate operations?(2points)

4. List 5 Basic Tech Skills Every Employee Should Have?(4 points)

Note: Satisfactory rating – 8 points Unsatisfactory - below 8 points

Score = _____

Rating: _____

Information sheet 4-Improving environmental practices and resource efficiency

Introduction

Resource efficiency means using the Earth's limited resources in a sustainable manner while minimising impacts on the environment. It allows us to create more with less and to deliver greater value with less input.

Resource efficiency isn't only valuable because it is essential for sustained economic growth,Moreover, promoting resource efficiency can increase the competitiveness of industry, create jobs, stimulate innovation, boost sectors such as recycling and resource recovery, and help ensure secure supplies of key resources.

Air, water, food, plants, animals, minerals, metals, and everything else that exists in nature and has utility to mankind is a 'Resource'. The value of each such resource depends on its utility and other factors.

4.1.Organisation's Environmental Performance can be improved by:

1. Reduce environmental impact - Quantify, monitor and control the ongoing environmental impact of your operations.
2. Cost savings - Through better energy management, efficient use of resources such as water and reduced waste.
3. Tax incentives - You may get relief if you buy energy efficient technology for your business.

4.2.Ways to Encourage an Environmentally Conscious Workplace

1. Implement a recycling program.
2. Conserve energy within the office.
3. Promote a paperless office.
4. Support green vendors.
5. Reduce by reusing..
6. Invest in office plants.
7. Conserve human energy. ...
8. Encourage sustainable transportation.

4.3.Solutions for Natural Resource Depletion

1. Make Electricity Use More Efficient. ...
2. Use More Renewable Energy. ...
3. Promote Sustainable Fishing Rules. ...
4. Avoid Single-Use Plastics. ...
5. Drive Less. ...
6. Recycle More and Improve Recycling Systems. ...
7. Use Sustainable Agriculture Practices. ...
8. Reduce Food Waste.

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1.. Define resource efficiency.? (2point)

2. how Organisation's Environmental Performance can be improved ?(2 points)

3. List Ways to Encourage an Environmentally Conscious Workplace?(2points)

4. List Solutions for Natural Resource Depletion?(3points)

Note: Satisfactory rating – 5 points Unsatisfactory - below 5 points

Score = _____

Rating: _____

Information sheet 5-Doing work as part of a team to identify possible areas for improvements

5.1 Work as a team to identify possible areas for improvement to work practice

Many of the most effective changes to improve environmental practices and resource efficiency are simple changes that can be made with little or no financial investment. Those that do require investment are often paid back by savings from reducing use of the resources required.

You should continually look for opportunities to improve environmental work practices and resource efficiency in your home, school or workplace.

Identifying these opportunities gives you and your colleagues the chance to implement them and help reduce the environmental impact of your daily activities.

Fig work team

2.2.Workpractice improvement opportunities

Most workplaces, schools and homes have a number of opportunities for improvement in environmental work practices and resource efficiency. This can before various reasons,including that:

- Current practices have been in place for a long time and have not been reviewed with the objective of reducing the environmental footprint
- Staff changes have meant that procedures designed to reduce environmental impact are not being followed thoroughly
- Existing procedures for reducing environmental impact have been successfully introduced,but further refinement will increase their success
- Other changes in the organization have created additional opportunities for reducing
  environmental impact
- There has not previously been a focus on improving environmental work Practicesorresourcefficiency.

Self-Check -5	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write the reasons for workplaces, schools and homes have a number opportunities for improvement in environmental work practices and resource efficiency. (6 points)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Question

Reference Materials

- **https://blog.worldsensing.com/mining/smart-mines-benefits/**
- https://www.brampton.ca/EN/Business/BEC/resources/Documents/What%20is%20a%20Standard%20Operating%20Procedure(SOP).pdf
- *National Centre for Sustainability, 2007, Manufacturing Knowledge and Skills for Sustainability, "Learner Guide"*, NSW Department of Environment and Climate Change p 23

- www.canadaone.com/ezine/dec03/privacy_checklist.html
- www.canadaone.com/ezine/feb2012/ontario_customer_service_standard_accessibility.

AKNOWLEDGEMENT

We would like to express our appreciation to the TVET instructors and experts of regional TVET bureau, TVET College, and Federal Technical and Vocational Education and Training Agency (FTVETA) who made the development of this learning module with required standards and quality possible.

We wish thanks and appreciation to the representatives of BEAR II UNESCO PROJECT who covers the financial expenses, scarifying their time and commitments to develop this learning module.

The trainers who developed this learning guide

No	Name	Qualification	Educational background	Institution	Region	Phone Number	E-mail
1							
2							
3							
4							

Federal TVET Coordinator

Full Name	Organization	Position	Telephone	E-mail
MULUKEN KASSAHUN	**Federal TVET Agency**	**TVET Curriculum TTLM Expert**	**0910779269**	**Muluk.last@gmail.Com**

References

Amabile, T. and Kramer. S. (2012). 'To Give Your Employees Meaning, Start With Mission' from HBR Blog Network [online]. Available here. [Accessed 18 April 2013.]

Dancer, S.J. (2010). 'Control of Transmission of Infection in Hospitals Requires More than Clean Hands,' *Infection Control and Hospital Epidemiology* , Volume 31, No. 9. (Available here.) [Accessed 26 June 2013.]

Johnson, A. (2007) Building Team Resilience by Helping Employees Find Meaning in Their Work [online]. Available here. [Accessed 18 April 2013.]

Rigoglioso, M. (1999) ‘Spirit at Work: The Search for Deeper Meaning in the Workplace’ from Harvard Business School Working Knowledge [online]. Available here. [Accessed 18 April 2013.]