Title	**Demonstrate technical knowledge of solid waste streams and evaluate options for resource efficiency**		
Level	**5**	**Credits**	**15**

Purpose	This unit standard is for people who may be working as resource efficiency programme managers and consultants. People credited with this unit standard are able to demonstrate technical knowledge of solid waste stream issues, measurement, hazards, and handling procedures; and evaluate options for minimising solid waste.

Classification	Zero Waste > Resource Efficiency

Available grade	Achieved

Guidance Information

1 Legislation and documents that apply to this unit standard include:
Hazardous Substances and New Organisms Act 1996;
Waste Minimisation Act 2008;
AS/NZS ISO 31000:2009 *Risk management – Principles and guidelines*;
NZS 5433 PARTS 1 & 2:2012 SET *Transport of Dangerous Goods on Land*;
Solid Waste Analysis Protocol (Wellington: Ministry for the Environment, March 2002) Ref. ME430, available at http://www.mfe.govt.nz/publications/waste/solid-waste-analysis-protocol;
local authority bylaws and rules.

2 Definitions
Organisation refers to an entire business entity in the private or public sector or a business unit within the organisation.
Solid waste means any discarded materials resulting from industrial, commercial, mining and agricultural operations, and from community activities including garbage, refuse, sludge (from a wastewater treatment plant, water supply treatment plant, or air pollution control facility) and rubbish in the form of solid, liquid, semi-solid, or contained gaseous material. It does not include wastewater, or solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges. Solid waste may be streamed for reuse, recovery or disposal.
Waste stream refers to where the waste is directed, such as for treatment, recycling, composting, stock food, reuse, recovery, landfill, or clean fill.
Waste management hierarchy refers to a preferred order of management approaches – eliminate, reduce at source, reuse, recycle, recover, dispose with minimal impact on environment.

Outcomes and performance criteria

Outcome 1

Demonstrate technical knowledge of solid waste stream issues.

Range hazardous, non-hazardous.

1.1 Issues relating to the generation of solid waste are discussed in terms of sources.

Range raw materials, packaging, downgraded product, rework.

1.2 Methods for managing solid waste issues are outlined in relation to local authority requirements.

Range includes but is not limited to requirements for managing at least two issues of – illegally dumped waste, pest infestation, odour, dust, leakage, litter.

1.3 Issues relating to waste stream handling and storage are identified and illustrated in relation to containment methods available for organisations.

Range evidence is required of one issue for each of a small, a medium, and a large organisation.

1.4 Issues relating to contaminated sites are outlined and illustrated with reference to actual sites and contaminant sources.

Outcome 2

Demonstrate technical knowledge of solid waste stream measurement.

Performance criteria

2.1 Solid waste stream measurement is explained in terms of methods available and what they are appropriate for.

Range methods – weight, volume, percentage composition, number of units (such as bins or skips).

2.2 The volume and composition of solid waste are established by visual assessment, estimate, and calculation.

Range includes – the use of factors to estimate volume from weight, and vice versa.

2.3 Solid waste stream measurement is described in terms of matching equipment and weighing methods to different solid waste streams.

Range equipment includes but is not limited to – scales, weighbridge, load cell, spring balance;
evidence is required for at least four waste streams.

2.4 Classifications used for measuring solid waste streams are defined in accordance with *Solid Waste Analysis Protocol*.

Range classifications – comingled, segregated, contaminated, clean, organic, inorganic, hazardous, non-hazardous.

2.5 Solid waste stream measurement is explained in terms of how to ensure the accuracy of uncalibrated methods of solid waste stream measurement.

Range uncalibrated methods – sampling, extrapolation, estimation, visual assessment.

Outcome 3

Demonstrate technical knowledge of solid waste hazards and handling procedures.

Performance criteria

3.1 Intrinsic properties of hazardous solid waste are described in accordance with the Hazardous Substances and New Organisms Act 1996.

Range includes but is not limited to – toxic, flammable, corrosive, oxidising, compressed gas, explosive, ionizing radiation, eco-toxic, biohazard.

3.2 Procedures for handling non-hazardous solid waste are described in accordance with workplace health and safety requirements.

Range procedures for – cut hazard, heavy weight, use of machinery, nuisance value.

3.3 Procedures for dealing with hazardous solid waste are described in accordance with workplace health and safety requirements.

Range procedures for at least three classifications of hazardous waste.

Outcome 4

Evaluate options for minimising solid waste.

Performance criteria

4.1 The evaluation explains and prioritises options for minimising solid waste in one or more organisations.

Range options – eliminate, reduce, reuse, recycle, recover.

4.2 The evaluation is guided by the waste management hierarchy.

4.3 The evaluation takes account of legislative and local authority requirements relating to minimising solid waste.

Planned review date	31 December 2023

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 June 2011	31 December 2015
Revision	2	21 November 2013	N/A
Rollover and Revision	3	28 June 2018	N/A

Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.