

<b>Title</b>	<b>Demonstrate knowledge of the <del>design and maintenance of stockpiles and sloping surfaces</del> <u>geotechnical requirements for ground stability</u> at surface extraction sites</b>		
<b>Level</b>	<b><del>6</del>5</b>	<b>Credits</b>	<b><del>20</del>15</b>

<b>Purpose</b>	People credited with this unit standard are able to: demonstrate knowledge of: strength characteristics of soil and rock <u>at surface extraction sites</u> ; <u>and analyse the geotechnical requirements of surface extraction sites</u> <del>and the design and maintenance of stockpiles and sloping surfaces, at surface extraction sites.</del>
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<b>Classification</b>	Extractive Industries > Surface Extraction
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<b>Available grade</b>	Achieved
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### **Explanatory notes** **Guidance Information**

- Performance of the outcomes of this unit standard must comply with the following:
  - ~~—— Health and Safety at Work Act 2015 (HSW);~~
  - ~~—— Health and Safety at Work (General Risk and Workplace Management) Regulations 2016;~~
  - ~~—— Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016;~~
  - ~~—— Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016;~~
  - ~~—— approved codes of practice issued pursuant to the HSW Act.~~
  - ~~Health and Safety in Employment Act 1992 (HSE);~~
  - ~~—— Health and Safety in Employment Regulations 1995;~~
  - ~~—— Health and Safety in Employment (Mining Operations and Quarrying Operations) Regulations 2013;~~
  - ~~—— approved codes of practice issued pursuant to the HSE Act.~~
- Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- Definitions
 

*Company procedures* mean the documented methods for performing work activities and include health and safety, operational, environmental, and quality management requirements. They may refer to legislation, regulations, guidelines, standard operating procedures, manuals, codes of practice, or policy statements.

*Industry best practice* may be documented in management plans, control plans, company procedures, managers' rules, occupational health and safety policy,

industry guidelines, codes of practice, manufacturers' instructions, and safe working and/or job procedures (or equivalent).

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## Outcomes and ~~evidence requirements~~ performance criteria

### Outcome 1

Demonstrate knowledge of strength characteristics of soil and rock at surface extraction sites.

#### Performance criteria

#### ~~Evidence requirements~~

- 1.1 Soil and rock types found at surface extraction sites are described in terms of their strength ~~in accordance with industry best practice~~.

Range strengths include but are not limited to – compressive, tensile, shear.

- 1.2 Industry best practice test methods for soil and rock compressive, tensile and shear strengths are described ~~for a given site~~.

- 1.3 The angle of repose is described in relation to the soil and rock ~~of a given site, in accordance with industry best practice~~.

Range excavated material, material in situ, stockpiles.

### Outcome 2

~~Demonstrate knowledge of~~ Analyse the ~~design and maintenance~~ geotechnical requirements of ~~stockpiles and sloping surfaces at~~ surface extraction sites.

#### Performance criteria

#### ~~Evidence requirements~~

- 2.1 The methods and principles for designing ~~sloping~~ surfaces are explained in terms of the quality and stability of the soil and rock ~~at a given site~~, in accordance with industry best practice.

Range includes but is not limited to – strength, ~~internal angle of~~ friction, specific gravity, porosity.

- 2.2 The geotechnical design and location of the area required for stockpiles of specified soil and rock compositions is explained in relation to the space available ~~at a given site~~.

Range production requirements, angle of repose, stability of stockpile base, traffic, slope.

- 2.3 The methods and reasons for monitoring and maintenance of ~~slopes-ground at a given site~~ are described in relation to potential hazards, in accordance with industry best practice.

Range monitoring may include but is not limited to – water content, water table, underlying geological structure, spontaneous combustion; hazards may include but are not limited to – slumping, creeping, hanging up, traffic interaction, pedestrians; maintenance may include but is not limited to – dust, contamination, product quality, erosion, capacity limits, stacking, load out.

<b>Planned review date</b>	31 December <del>2019</del> 2022
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 July 1999	31 December 2017
Review	2	27 January 2005	31 December 2017
Rollover and Revision	3	16 July 2010	31 December 2017
Review	4	18 June 2015	<del>31 December 2019</del> N/A
<u>Review</u>	<u>5</u>		<u>N/A</u>

<b>Consent and Moderation Requirements (CMR) reference</b>	0114
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### **Please note**

~~Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.~~

~~Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.~~

~~Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.~~

~~Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.~~

#### Comments on this unit standard

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

~~Please contact the NZ Motor Industry Training Organisation (Incorporated) (MITO) [info@mito.org.nz](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.~~