

March 2026

Targeted assessment program

Guidance note: materials and soils management

Purpose of this guidance note

Important: Information provided here is intended as guidance only and is not intended to be relied upon as a comprehensive list of all controls that may apply to risks associated with mine site rehabilitation. Mine operators must undertake risk assessments and implement controls relevant to the risk profile of their mining operation.

The Resources Regulator manages the risks to rehabilitation as part of a risk-based and outcomes-focused approach to compliance and enforcement. The Regulator's risk-based intervention includes the ongoing identification and verification of risk profiling, incorporating risk control measure verification and targeted assessments focussing on critical risks and the critical controls required to mitigate these risks.

Further details are available on our website at resources.nsw.gov.au/resources-regulator/mine-rehabilitation/rehabilitation-compliance

An important part of the Regulator's compliance and enforcement strategy involves implementing a scheduled and targeted assessment program for mines. The Regulator has developed targeted assessment programs (TAPs) around identified critical controls.

The primary aim of a TAP is to assist industry with continual improvement in rehabilitation outcomes. The TAPs comprise inspections across NSW mine sites to determine whether measures have been identified and implemented to facilitate sustainable rehabilitation outcomes.

The TAPs proactively assesses how effectively a mine controls risks and implements the preventative and mitigating controls that are critical in planning for and implementing mine site rehabilitation. Each TAP focuses on the implementation of a specific critical control.

The materials and soils management TAP comprises a targeted assessment of how a mine site is managing materials and soils to achieve sustainable rehabilitation outcomes. This includes how a mine is managing any potential soil or material deficits. The TAP involves both documentary and on-site assessment, to draw conclusions and make recommendations for continual improvement.

This guidance note may help mine operators understand the range of issues that are assessed by the Regulator as part of the materials and soils management TAP.

Assessment objectives

The standard conditions of mining leases set out in Schedule 8A of the Mining Regulation 2016 require lease holders to rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs. The key requirements set out in the standard conditions can be summarised as follows:

- To rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs (clause 5).
- To ensure rehabilitation of the mining area achieves the final land use. In other words, rehabilitation achieves the final landform and land use as set out in the rehabilitation objectives statement, the rehabilitation completion criteria statement and (for large mines) the final landform and rehabilitation plan (clause 6).
- To conduct a rehabilitation risk assessment and implement the identified control measures to eliminate, minimise or mitigate the risks to achieving the final land use (clause 7). This includes undertaking a risk assessment whenever a reasonably foreseeable hazard is identified that would present a risk to achieving the final land use (clause 7(3)(c)).
- To prepare a forward program that includes the requirement that rehabilitation of land and water disturbed by mining activities under the mining lease must occur as soon as reasonably practicable after the disturbance occurs (clause 13(1)(c)).
- To ensure the forward program includes a schedule of mining activities and the spatial progression of rehabilitation through its various phases for the next 3 years (clauses 13(1)(a) and (b)) to implement the matters set out in the rehabilitation management plan, including the timeframes for implementation of these matters (e.g. rehabilitation) as specified in the forward program (clause 10(4)).
- To prepare an annual rehabilitation report that describes the rehabilitation undertaken over the annual reporting period and demonstrates progress made through the phases of rehabilitation provided for in the forward program (clauses 13(2)(a) and (b)).

The TAP comprises a targeted assessment of materials and soils management to ensure measures have been identified and implemented to facilitate sustainable rehabilitation outcomes. The objectives of the TAP include:

- ensuring the range of risks associated with materials and soils are identified and appropriate controls are in place to facilitate sustainable rehabilitation outcomes
- identifying potential constraints/opportunities to maximise the salvage of soil resources for use in rehabilitation
- ensuring an inventory of soil resources and materials (e.g. inert capping material, etc) has been defined to ensure the needs for rehabilitation of the final land use can be met
- ensuring the selective handling and management of mine materials (e.g. overburden, tailings, reject materials etc.) to address potential geochemical and geotechnical constraints to rehabilitation
- ensuring the substrate is suitable to support proposed revegetation outcomes (e.g. native or agricultural rehabilitation)

- ensuring control measures are validated via monitoring, inspections or recorded to enable risks to be appropriately addressed
- ensuring the mine site has engaged the appropriate skills and experience in relation to materials and soils management
- ensuring rehabilitation is integrated into mine planning systems
- ensuring techniques and measures have been developed and implemented to salvage, protect and maintain biological resources (e.g. topsoil, subsoil, seed bank, plant material, logs, hollows etc.) for use in rehabilitation
- compliance with the regulatory obligation to commence rehabilitation as soon as reasonably practicable and the achievement of the final land use.

It should be noted that the specific need to implement the above controls will be based on the risks as well as scope of activities being undertaken on a mine site.

Documents and records to be reviewed

The documentary assessment component of the TAP will include a review of the following types of documents and records (as relevant). This is not an exhaustive list and other documents for review may be identified during the site inspection.

- Rehabilitation risk assessment(s)
- Rehabilitation management plan (RMP)
- Annual rehabilitation report
- Forward program
- Final land use and rehabilitation plan
- Baseline soil surveys/assessments
- Rehabilitation methodology records
- Rehabilitation monitoring records
- Soils and materials balance/database
- Characterisation analysis of the biological resources and materials to be used in rehabilitation (e.g. a geochemical and geotechnical analysis of materials).

Details of the assessment

The TAP involves both documentary and on-site assessment. A summary of the assessment objectives and the assessment considerations for the materials and soils management TAP is provided below. It is relevant to note that not all assessment considerations will be relevant to all mines.

To ensure the range of risks associated with materials and soils management are identified and appropriate controls are in place to facilitate sustainable rehabilitation outcomes.

The assessment will evaluate whether the site rehabilitation risk assessment(s):

- Identifies, assesses and evaluates the risks that need to be addressed to achieve the rehabilitation outcome documents.

- Identifies site specific risks associated with materials and soils management.
- Identifies suitable controls and strategies to treat the identified risks (Note that the observations made in the remaining sections of the TAP will inform the adequacy of the risk assessment).
- Is relevant to current mining operations.
- Identifies how the effectiveness of risk control measures will be assessed.
- Was produced by a team of appropriately skilled and experienced people from the workforce with responsibilities for mine rehabilitation.
- Includes controls or validation of the controls that have been assigned to a responsible and suitably qualified position.
- Includes a centralised document (e.g. risk register) where multiple risk assessments have been conducted - to link all assessments to the Schedule 8A requirements.

To identify potential constraints/opportunities to maximise the salvage of soil resources for use in rehabilitation and to ensure that the substrate is suitable to support proposed revegetation outcomes (e.g. native or agricultural rehabilitation)

The assessment will include the following:

- Whether a characterisation analysis is outlined in the RMP – section 6.2.1 (a) (k) and section 6.2.4.
- Whether a baseline soil survey/assessment of soils has been undertaken by a suitably qualified soil scientist or equivalent and:
 - includes soil suitability, thickness and quality of topsoil and subsoil resources,
 - includes soil texture, fertility and presence of organic matter,
 - identifies presence and abundance of weed species and or non-target revegetation species.
- Whether immediately prior to re-application, representative samples of topsoil stockpiles are collected and analysed to characterise material to determine any potential limitations to vegetation (e.g. sodicity, limited microbial activity, nutrients, organic matter, etc).
- Based on the characterisation analysis, whether advice from a suitably qualified expert has been received on the range of ameliorants required to address limitations in the revegetation substrate.
- Whether prior to revegetation activities, the prepared substrate is analysed to determine if amelioration measures (e.g. application of gypsum and lime) have been successful.

To identify potential constraints / opportunities to maximise the salvage of biological resources for use in rehabilitation.

The assessment will include the following:

- Whether a characterisation analysis is outlined in the RMP – section 6.2.1 (b) (c) (k) and section 6.2.4.
- Whether a soil seed bank evaluation has been undertaken where native revegetation is proposed in order to maximise opportunities for salvage or identify need for supplementation.
- Whether a baseline assessment has been undertaken to identify existing ecological conditions and /or presence of weed species and/or non-target revegetation species.

- Whether biological materials for salvage (tree hollows, stags, translocation species, etc) have been identified.

To ensure techniques have been developed and implemented to salvage biological resources (e.g. soil, soil seed bank, plant material, logs, hollows etc.) for use in rehabilitation based on outcomes of characterisation analyses.

The assessment will include a review of the biological resource salvage and storage procedure outlined in the RMP – section 6.2.1 (a) (k) and section 6.2.4 and consider the following:

- Whether there is sufficient time for the implementation of pre-clearance topsoil and biological resources salvage procedures.
- Whether opportunities are maximised for direct return of topsoil / subsoil resources.
- Whether topsoil and subsoil stripping occurs when soils are moist (e.g. not saturated nor dry) and utilises appropriate equipment to the appropriate depths as identified through characterisation assessments.
- Whether stripping techniques have been developed to maximise integrity of the seedbank.
- Whether topsoil and subsoil layers have been stripped separately so they can be stored and/or returned to rehabilitation areas in sequential order.
- Whether soil resource stockpiles are located in a way that protects them from future mining operations.
- Whether soil stockpile heights are limited (e.g. typically less than 2 metres) to maximise surface exposure and biological activity.
- Whether a cover is established over stockpiles to reduce soil loss and reduce the potential for weed infestation and maintain the biological health of the stockpile (e.g. seeded with cover crop / target vegetation species / agricultural pasture mix).
- Whether appropriate erosion, dust and sediment controls have been implemented.
- Whether weed growth on stockpiles is monitored and controlled.
- Whether ameliorants and organic materials are applied to the substrate in accordance with the characterisation analysis.

To enable the selective handling and management of mine materials (e.g. overburden, tailings, reject materials etc.) to address potential geochemical and geotechnical constraints for rehabilitation.

The assessment will include the following:

- Whether a characterisation analysis has been conducted and the geochemical and physical properties of waste materials are understood.
- Where relevant, whether an appropriate geological model has been adopted to determine source of problematic material – typical for acid metalliferous drainage. Typically block models are utilised for metalliferous mines whilst regular verification testing would be appropriate for coal mines.
- Whether an ongoing sampling program is in place to identify potential changes in material properties.

- Whether a strategy / procedure/ management plan has been developed for selective handling and management of problematic materials for tailings storage facility construction material (e.g. potentially acid forming materials).
- Whether the characterisation analysis is outlined in the RMP – section 6.2.1 (f) (g) (h) (i).

To define an inventory of rehabilitation materials to ensure the needs for rehabilitation of the final land use are met.

The assessment will review whether a rehabilitation material inventory (balance and database) has been developed and maintained to include the following [and is outlined in the RMP – section 6.2.1 (a) (d) (k)]:

- Volumes of all rehabilitation material stockpiled (topsoil/ subsoil/ inert waste rock).
- Volumes of all rehabilitation material required for application to current and future disturbance areas, including cover on emplacements and capping of tailings storage facilities.
- Delineation of material types based on requirements in the final landform, such as tailings capping material.
- Chronology of treatments (i.e. weed control, application of cover crop, etc) undertaken on the stockpiles.
- An estimate of the volume of suitable alternative material required to be imported onto site to supplement potential rehabilitation material deficits
- Record data on the location of the stockpiled material including date stripped, source area, indicative volume and pre-strip plant community type.
- Recording of information using site-based GIS system.

Where mining domains require a cover (or cap) such as tailings storage facilities and waste rock/overburden emplacements, the cover/cap design should be developed to determine the type and amount of material required for the following scenarios [noting that emplacement capping must be outlined in the RMP – section 6.2.1 (d) and section 6.2.3.(c)]:

- establishment of a sustainable growth medium,
- the cover design for emplacement areas (cover thickness/materials required),
- the capping design for tailings storage facilities (cover thickness/ materials required/ engineering requirements such as capillary break).

Where the import or alternative supply (e.g. via borrow pits) of material is required, the necessary approvals should be identified / in place to allow this. The timing for seeking approval should be outlined in the forward program and / or the life of mine rehabilitation schedule in section 6 of the RMP.

Assessment stages, reporting and feedback to industry

TAPs are managed in 3 stages:

Stage 1: pre-arrival arrangements, review and information exchange

At least two weeks before a TAP, participant sites will receive notification of the forthcoming TAP. This notification will include:

- assessment visit schedules
- assessment team composition
- focus areas for the assessment (e.g. a specific critical control or compliance priority)
- resources required by the assessment team, including the necessary site personnel (e.g. technical experts) that will be required to be interviewed and participate in the site inspection
- tools to be used in the assessment.

Stage 2: on-site assessment

This site visit will be looking for a demonstration that:

- the range of risks to rehabilitation have been identified
- the mine site has implemented appropriate systems, procedures and controls to facilitate sustainable rehabilitation outcomes
- systems, procedures and controls are functional in practice and effective at controlling the risks
- the workforce is competent and confident about the risk controls relevant to their area and level of responsibility
- based on monitoring, the effectiveness of controls are evaluated and the risks are reviewed to facilitate continual improvement.

Stage 3: Findings, recommendations, follow up

The assessment team will conclude whether, and to what extent, the mine site has demonstrated:

- compliance with legislative requirements
- how relevant components of the rehabilitation management system comply with the minimum legislative requirements
- how well the rehabilitation management and monitoring plans are being implemented
- satisfactory performance in achieving sustainable rehabilitation outcomes on the ground.

The assessment team will debrief site management on their preliminary findings at the completion of the site assessment. An assessment finding letter and/or a notice under section 240 of the *Mining Act 1992* may also be issued to the mine following completion of the site assessment.

A report providing an overview of the findings and recommendations of each of the completed TAPs will be prepared and published on our website as a learning resource.

A follow-up site inspection may also be conducted to:

- verify the progress made by the mine on actioning the recommendations outlined at the initial debriefing
- verify progress made on addressing any matters outlined in any assessment finding letter

- verify compliance with any directions outlined in a section 240 notice
- investigate any potential alleged breaches identified as part of the TAP.

What you should do to prepare for a TAP

Review your strategy and capacity to control risks and managing compliance with the preventative and mitigating controls that are critical in planning for and implementing mine site rehabilitation. Sites should ensure measures have been identified and implemented to facilitate sustainable rehabilitation outcomes and that practices are in line with:

- requirements under the *Mining Act 1992*
- conditions of the mining lease(s), specifically Schedule 8A of Mining Regulation 2016
- carrying out rehabilitation progressively, that is, as soon as reasonably practicable following disturbance
- commitments outlined in the forward program and rehabilitation management plan
- achieving the approved final land-use(s)
- available guidance material.

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