



Mine Closure Planning

Why is this Group Standard important?	<p>This standard sets the minimum requirements for planning and management of closure and reclamation activities from exploration through operations to post-closure in accordance with AngloGold Ashanti (AGA) strategic objectives.</p> <p>The purpose of this standard is to identify the requirements to responsibly close and reclaim mine sites and manage current and future risks and liabilities, allowing the company to leave sites in a condition which is safe and stable, with minimal social risks as well as minimal adverse impacts on people and the environment. We endeavour to leave communities empowered to define and experience their own post- mining future.</p>	
Audience	<p>Anyone involved in closure planning (biophysical, social and labour), business planning and estimation of closure liabilities at AGA managed operations, exploration sites, legacy sites and projects.</p>	
Legend	<p><i>Glossary terms</i> are in italics.</p> <p>Approvals are defined in the <i>Group Delegation of Authority (DOA)</i> and Appendix 1.</p> <p>Hyperlink to another document or to an intranet site or website.</p> <p>Reference to another AGA document without a hyperlink.</p>	
Glossary	<i>Care and maintenance</i>	<p>Management and maintenance of mine infrastructure and services during temporary cessation of operations due to economic, political or operational difficulties where there is a potential to recommence operations at a later date.</p>
	<i>Closure completion criteria</i>	<p>An agreed standard or level of performance which demonstrates successful closure of a site.</p>
	<i>Concurrent / progressive rehabilitation</i>	<p><i>Rehabilitation</i> that is conducted during the operational phase of mine life.</p>
	<i>Decommissioning</i>	<p>The process of taking infrastructure out of active services at the end of its use and includes its removal and rehabilitation of the footprint if not required for post-mining use.</p>
	<i>Financial assurance</i>	<p>Funds required by Government, in the form of guarantees, bonds, and/or cash that will be available</p>

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	to complete closure works, even if the mining company goes bankrupt or otherwise abandons the site.
<i>Horizon planning</i>	The process that informs the executives of the optionality around an asset to drive growth discussions and informed decisions at an asset and portfolio level. It consists of the development of up to four horizons at different level of confidence, with Horizons 1, 2 and 3 to be presented at the AGA <i>Strategic Options Workshop (SOW)</i> .
<i>Integrated plan</i>	Quarterly rolling forecast that sets the rhythm to the business planning cycle, and forecasts production and financial performance. Completed at a range of different timeframes relevant to the specific Integrated Plan.
<i>Life of Mine (LOM)</i>	The length of time the mine is planned to be in production, based on the current mine plan and budget.
<i>Life of Asset (LOA)</i>	The length of time the asset (including but not limited to the mine, processing facilities, utilities, housing, and associated infrastructure) is owned, operated, and closed by the company up until relinquishment or divestment. This includes the <i>post-closure</i> period.
<i>Post-closure</i>	When used in relation to a time period, it refers to the period between closure and relinquishment. Activities during this period tend to be limited to monitoring and potentially, some maintenance and other complimentary activities to reach physical and chemical stability.
<i>Rehabilitation</i>	The return of disturbed land to a stable, productive and/or self- sustaining condition (i.e., requires no ongoing maintenance to meet the post-mining land use objectives) after taking into account beneficial uses of the site and surrounding land.
<i>Strategic Options Workshop</i>	The Strategic Options Workshop (SOW) is an annual workshop to provide executive insight into the various investment decisions available at each site, such that it can make decisions on individual assets and the group portfolio. These often show opportunities at a site that could lead to an extension of an operation beyond the business plan and can help inform future land disturbance and other factors

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		that could impact future closure obligations and commitments.
	<i>Social transition</i>	The planning, considerations and activities undertaken throughout the LOA to develop and implement the transition of a community, including its workforce, towards closure of an operation.
	<i>Sudden closure</i>	Unplanned closure, i.e., that which occurs prior to the expected duration of exploration or mining and processing activities. For the purposes of closure planning, <i>sudden closure</i> assumptions are based on the current (at the time of publication) mine activities and level of disturbance.

You must comply with AGA Group-wide Standards to the extent they apply

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Integration Throughout the Mine Life Cycle

Integrating closure planning directly into the *life of mine* and *life of asset* planning combines *rehabilitation, decommissioning, and social transition* principles with strategic mine planning and design to prevent poor and underfunded closure outcomes.

- Integrate mine closure planning throughout the whole mine life cycle as follows:
 - **Exploration stage:** Adopt and comply with the provisions of this standard as appropriate to ensure cessation and closure of exploration activities in a manner that meets the intent of the standard.
 - **Project stage:** Develop closure plans and cost estimates in line with the requirements for major projects.
 - **Operational phase:** Develop and update a mine closure plan and costs estimates (including *social transition plan* and its implementation) with increasing levels of detail and confidence over the operational phase as part of *horizon planning* and *integrated planning*.
 - **Closure period:** Implement the final mine closure plan (including final components of *social transition plan*) from cessation of operations during which *decommissioning*, dismantling and *rehabilitation* occurs until the point in time where management of the site is largely limited to monitoring and maintenance.
 - **Post-closure monitoring:** Between closure and relinquishment, the activities tend to be limited to monitoring, some maintenance where applicable and other complimentary activities (like long-term or possibly in-perpetuity water treatment) to reach physical and chemical stability. This may also include monitoring and evaluation of the *social transition plan*.
 - **Relinquishment:** Obtain formal approval by the relevant regulating authorities indicating that the *closure completion criteria* for the mine have been met to the satisfaction of the authorities and ownership and residual liability for the land may now be accepted by the next land user.

Knowledge Base

We compile, continuously update, and maintain closure plans with documents, records and data that provide the context for our closure plans.

- Store and maintain documents, records and data related to closure planning so that they are retrievable and protected against damage or loss. This includes:
 - History and records of all national, regional and local legal and regulatory requirements and site- specific license, permit and approval requirements for closure.
 - History and records of all agreements made with, and commitments made to stakeholders.
 - Characterization of the pre-mining and current socio-economic, cultural and environmental context, including information gained in technical studies, survey and monitoring data, risk assessments, research and stakeholder engagement exercises.
 - Inventory of the site infrastructure, including legacies, and current and past potential contaminant sources.
 - Maps of the license area(s) subject to the closure plan, showing key features.

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- Detailed justification, where previous closure commitments cannot be implemented, of the reasoning and data supporting the selection of an alternative option.
- Applicable data and lessons learnt from other sites and relevant trials, research and studies conducted on or for the site.
- Detailed risk assessments and assessments of *post-closure* land use and associated closure options.

Mine Closure Planning

We develop closure plans that encompass all disciplines related to closure, which will lead to better outcomes across a wide range of considerations and in turn creates the opportunity to proactively minimize risks and maximize opportunities for all stakeholders.

- Develop the mine closure plan using a multidisciplinary team composed of members with appropriate skills and experience, including at a minimum, environment, finance, mine planning, engineering, social/community affairs, security, legal, operations or projects and technical services.
- Identify and document the relevant legislative and regulatory requirements and commitments associated with mine closure, as well as any other binding obligations (internal and external) that apply to the closure of the site.
- If legislative and regulatory requirements cannot be met or are not the optimal requirement for closure, negotiation of alternative requirements with the applicable authority will be required.
- Develop a *closure vision*, underpinned by clearly identified specific *post-closure* land use(s) for each physical domain as well as a shared vision of a post mining socio-economic future. Identify *closure objectives* associated with the vision, *post-closure* land use(s) and the desired socio-economic outcomes to guide the assessment of the closure options. Include:
 - Compliance with host country requirements and site-specific AGA commitments. Mitigating and managing contamination (water, air, soil) and disturbed land.
 - Minimising costs, but not at the expense of meeting other closure objectives.
 - Establishing sustainable land use(s) that do not compromise future public health, safety and security.
 - Evaluating the use or re-purposing of existing infrastructure and services for future economic benefit.
 - Transitioning of the host community to a new socio-economic status without the mine.
- Develop and implement a stakeholder engagement strategy and plan that identifies key stakeholders, describes their interest with regards to closure and consults the stakeholders in the development of objectives for post mining socio-economic activities, post-closure land use, as well as the definition of completion criteria. Closure timeframes must be communicated to stakeholders, and stakeholders must be updated as the timeframe evolves.
- For exploration ventures, develop reclamation plans and cost estimates as well as an exit strategy should the venture not advance beyond the exploration phase.
- For projects, develop closure plans and cost estimates in line with the requirements for major projects.

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- Complete risk and opportunity assessment(s) to determine closure methodologies, identify suitable *closure completion criteria* for facilities and compare different closure options, with input from all disciplines with accountabilities for the various aspects of the plan. Where required, support the assessments with technical studies of a more quantitative/scientific nature.
- Document the preferred closure options for all facilities and infrastructure as well as socio-economic and labour interventions, including:
 - Context on the conclusions drawn that are used to determine the final land-use, closure objectives, closure options as well as socio-economic and labour interventions.
 - The associated risks, benefits, design requirements and stakeholder accountabilities.
 - Justification where any preferred closure option deviates from commitments and legal requirements.
 - Any additional or ongoing investigations, research requirements or stakeholder involvement on closure options.
- Identify measurable *closure completion criteria* and key performance indicators that demonstrate achievement of the closure objectives.
- Develop a *post-closure* monitoring and maintenance program that includes any operational monitoring and maintenance required to substantiate closure monitoring, inclusive of socio-economic monitoring and evaluation.
- Allocate identified actions (including studies and trials) required for the updating and implementation of the closure plan, as well as monitoring and evaluation (assurance), to accountable positions/persons.
- Document an identified or proposed relinquishment process for discussion with regulators and other stakeholders.
- Identify and document alternative strategies to planned closure that can be implemented in the event of either *sudden closure* or *care and maintenance*.
- Get approval of the mine closure plan from the General Manager (or Project Director) of the operation or site.
- Get **approval (Group DOA #8.4)** to submit the mine closure plan (draft or final document) to regulators or any external stakeholders.

Biophysical Domain Requirements

- Develop and document, in sufficient detail to enable execution, *rehabilitation* methodologies that are:
 - Designed to achieve *post-closure* land use objectives, including justification where any land use objective deviates from commitments and legal requirements.
 - Based on adequate and scientifically supported information.
 - Utilise opportunities for *concurrent rehabilitation* to occur during the normal operational phase of the site.
- Develop a concurrent reclamation plan (CRP) that is integrated into annual mine plan updates as well as *Life of Mine* and *Life of Asset* plans

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- Identify and document, in sufficient detail to enable execution, how infrastructure and services will be decommissioned to achieve closure objectives, including infrastructure and services to be:
 - Left intact for re-purposing for agreed use by other stakeholders.
 - Demolished and its footprint rehabilitated.
 - Dismantled for re-use or sale (and the potential salvage value, if applicable).
 - Decontaminated before re-use, sale, or final disposal. This includes decontamination to comply with the International Cyanide Management Code.
- Develop and document, in sufficient detail to enable execution, a security plan to ensure infrastructure, services and rehabilitated areas are protected until final relinquishment.
- Where applicable, develop fluid management and water treatment systems to operate during the *post-closure* period until performance criteria and any regulatory requirements are met.

Social Transition Plan

- Develop a Social Transition Plan to minimise social impacts and maximise opportunities for the communities.
- Consider the combined assets of the community and the mine, including human resource, social infrastructure, economic and financial assets with the aim of ensuring the self-sustainability of mine communities after mine closure.
- Include in the *social transition plan*:
 - Identified mine closure related social risks and their mitigation measures including those related to community health, safety, and security.
 - All commitments and agreements made during the mine operational phase, including those in environmental management plans, socio-economic development (SED) programmes, corporate social investment projects (CSI), etc.
 - Alignment and collaboration with the government’s local and regional development plans.
 - The mine’s infrastructure and services that can be used and/or re-purposed in the post-mining era.
 - Skills development and training.
 - Local content, to include both procurement and employment.

Labour and Retrenchment Plan

- Develop a Labour and Retrenchment Plan to manage gradual labour retrenchment associated with mine closure in a legal, professional, consultative, and fair manner. Include in the plan:
 - Legislative requirements.
 - Any agreements with labour unions, above legislative requirements e.g., life after work support training programmes.
 - Scheduling progressive labour reduction from cessation of mining until site relinquishment. Exit medical assessments.
 - Personnel files retention, including occupational health records.
 - Labour-specific internal and external communication strategy/plan.

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Mine Closure Cost Estimates

- Document the following cost estimates associated with closure, including assumptions and exclusions:
 - **Financial Liability Cost Estimates or Asset Retirement Obligation (ARO)** which is the estimated liability based on applicable accounting requirements as at the time of reporting. This includes costs estimates of the liability for the *decommissioning* of the mine infrastructure, *rehabilitation* of the current disturbed areas as well as costs associated with all social commitments and agreements that must be honoured even in the case of *sudden closure*.
 - **Life of Asset Closure Cost Estimates** which cover the expected full cost to close the mine, assuming the site operates until the end of its currently planned *life of mine* and the required *post-closure* monitoring period. It includes *rehabilitation* of both current and future disturbed land, *decommissioning* of current and planned infrastructure as well as expected *social transition* and retrenchment costs.
 - **Regulator Cost Estimate** if applicable, which is the cost that forms the basis of a bond or guarantee provided to a regulatory body (if different from ARO or LOM cost estimates). Also include the status of *financial assurance* in place, where applicable.

Mine Closure Plan Review and Update

We review and update closure plans so that they are responsive to information accumulating in the Knowledge Base including, risk assessments and mitigation plans, emerging opportunities, operational experiences, changing mine plans, *rehabilitation* trials, legislative changes, and stakeholder consultations.

- Review and update closure plans:
 - Annually, for exploration-only activities.
 - At least every three years, for operational mines,
 - Within twelve months of notification of a significant change to a site's operational or business plan, legislation, or the final closure objectives.
- Update the Financial Liability Cost Estimates / Asset Retirement Obligation (ARO), the *Life of Asset* Closure Cost Estimates and the Regulator Cost Estimate (if applicable), so that they are reflective of mine plan changes, updates to unit rates, changes in existing or projected environmental conditions, or other changes, such as in legislative, regulatory, stakeholder/community commitments.
- Update the stakeholder engagement plan to reflect stakeholder involvement in the planning, implementation and management of closure and reclamation plan as well as the *Social Transition* plan.
- Develop the final closure plan and associated designs for a facility or part of operation, in the case where only a facility or a part the mine is to be closed whilst the rest of the mine continues to operate at least a year before closure, to allow for it to be included in the planning and budgeting cycle.
- Develop a final/definitive mine closure plan for sites with a remaining *Life of Mine* of three years or less and review annually until closure.

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- Get **approval (Group DOA #8.6)** of the updated mine closure plan and any significant new commitments.

Business Planning and Budgeting

Closure planning is an integral part of the AGA annual business planning cycle and a balanced closure approach that is fully incorporated into mine planning activities will lead to better closure outcomes.

Include the following as part of the annual business planning process:

- **Life of Asset (LOA) Closure Plan and Costs** consisting of documentation of the impact of the new Business Plan on LOA closure plan, schedule, costs, and cash flows should be linked to the *horizon planning* and the associated budget(s) and must be included in the *Strategic Options Workshop* packs.
- **Closure Execution Plan (CEP) or Concurrent Rehabilitation Plan (CRP)** consisting of the next 24 months' *concurrent rehabilitation* activities, schedule, budget and cashflows should be developed and updated as a component of the *Integrated Plan*
- **Performance Monitoring and Evaluation** consisting of a review of completion of the previous CEP/CRP activities as well as actual vs budget cost variance analyses must be undertaken and documented during the review and update of the *Integrated Plan*.

Financial Reporting

Mine closure financial reporting provides insight and transparency into a company's mine closure financial position and its operations to give stakeholders the right information, in the right amount of detail, to make better-informed decisions.

- Develop a Financial Liability Closure Cost Estimate or Asset Retirement Obligation (ARO) for financial reporting and disclosure, complying with the International Accounting Standard 37 Provisions, Contingent Liabilities and Contingent Assets (IAS 37)
- Update the Financial Liability Closure Cost Estimate/ARO at least annually in accordance with AGA financial accounting standards.
- Maintain evidence supporting the execution of controls and make this available for audit and assessment.
- Document the reason for, or drivers of, the changes in Financial Liability Closure Cost Estimate, including:
 - Volume / Quantity Changes
 - Unit Rate Changes
 - Discount rate changes
 - New Facilities/ Infrastructure
 - Infrastructure Decommissioned
 - Change in methodology

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- Get approval ([Appendix 1 ID#1](#)) if the value of the financial liability closure cost estimate/ARO changes by more than US\$1 million.

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Appendix 1: Authorities

Authority Title		Endorse	Approve	Inform
ID#1 Approval of Financial Liability Closure Cost Estimate changes				
Changes up to \$15 million				
	BU Vice President Sustainability/Environment	✓		
or	General Manager	<\$1M	✓	
or	Head of Business Unit or Major Project	<\$3M	✓	
or	Chief Operating Officer	<\$15M	✓	
	VP Mine Closure Planning / SVP Group Finance			✓
and	SVP Group Finance			✓
Changes over \$15 million				
	BU Vice President Sustainability/Environment	✓		
and	Chief Operating Officer	✓		
	Chief Financial Officer		✓	
	VP Mine Closure Planning			✓
and	CEO			✓

Notes: Authorities must not be within the same reporting line. That is, a role does not endorse their line management's decisions.

E Endorse: Reviews proposals and provides advice before the approver makes the decision. This role is accountable for the advice given (as opposed to a 'review' or 'checkpoint' in a process). Endorsement is not a right of veto. If an endorser disagrees with a decision to approve, they should escalate as necessary.

A Approve: Accountable for the decision, considering input from the endorser. Majority should have one approver only (single-point accountability).

I Inform: Required to act based on the decision made. Should exclude 'process / courtesy' informs.

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