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2012 Americas School of Mines

Basics of US Mining Accounting

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Introduction

Introduction

- ***Objectives and goals***
  - Identify and distinguish between the different phases of mining operations
  - Identify the key accounting principles for a typical mining company

Agenda

Stages of Mine Operations
(15 min break)
Key Accounting Principles (part 1)
(15 min break)
Key Accounting Principles (part 2)
Q&A

Introduction

Have you ever been to a mine site?

a) Yes

b) No

Stages of Mine Operations

Stages of Operations: Overview

Stages of Mine Operations:

Stage 1: **Exploration**

Stage 2: **Evaluation**

Stage 3: **Development**

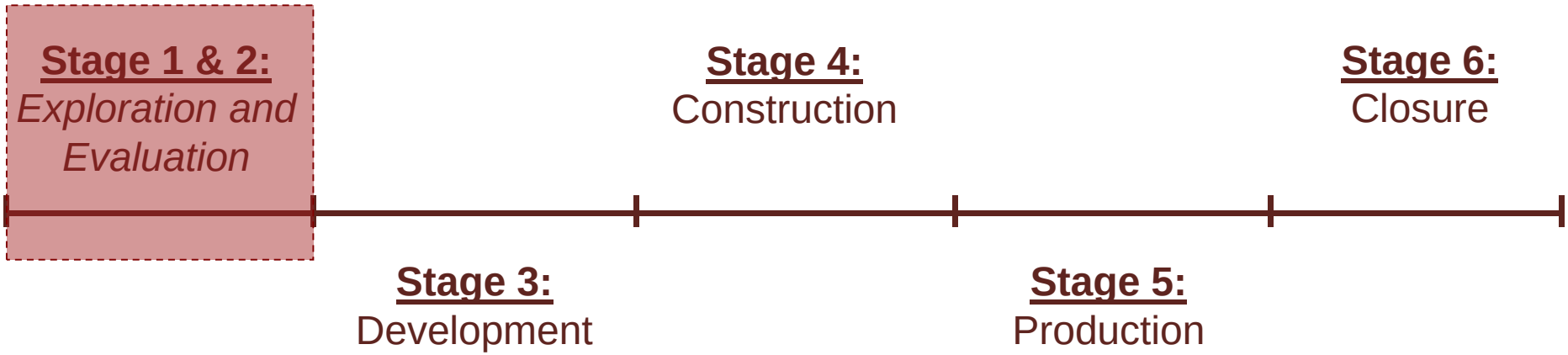
Stage 4: **Construction**

Stage 5: **Production**

Stage 6: **Closure and Rehabilitation**

Note: The basic accounting treatment of these six phases will be discussed throughout the course.

Stages 1 & 2: Exploration and Evaluation



Stage 1: Exploration

Exploration is the search for resources suitable for commercial exploitation. It includes:

- Researching and analyzing historic exploration data.
- Conducting topographical, geological, geochemical and geophysical studies.
- Exploratory drilling, trenching, and sampling.

Stage 2: Evaluation

Evaluation means determining the technical feasibility and commercial viability of a mineral resource:

- Determining volume and grade of deposits.
- Examining and testing extraction methods and metallurgical or treatment processes.
- Surveying transportation and infrastructure requirements.
- Conducting market and finance studies.

Stages 1 & 2: Exploration and Evaluation (cont)

Exploration vs. ***Evaluation***

Exploration = Discovery Costs

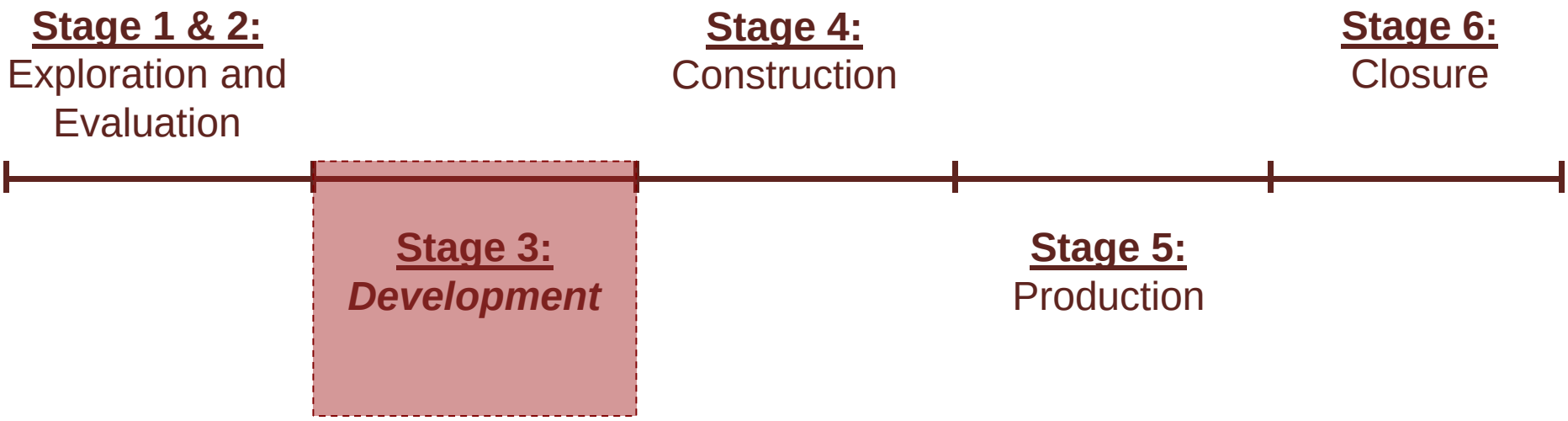
Evaluation = Proving Costs

Stage 1: Exploration and Evaluation – Accounting Treatment

Once exploration and evaluation costs have been recorded in the Profit and Loss statement, they cannot subsequently be reinstated as assets.

a) True
b) False

Stage 3: Development



Stage 3: Development

Development means establishing access to the mineral reserve and other preparations for commercial production.

Costs may include:

- Sinking shafts and underground drifts
- Permanent excavations
- Infrastructure development (road and tunnel building)
- Advance removal of overburden and waste rock (stripping)

Stage 3: Development

- **Commencement** - Phase commences when it is determined that commercially recoverable reserves exist (usually through completion of a bankable feasibility study) and a decision is taken by the directors to develop the mine.

- **Conclusion** - Phase concludes upon the commencement of sustainable production from the resource.

Stage 3: Development:

US GAAP Accounting treatment: Capitalize Costs

- Development costs are usually carried forward until the mine is commissioned (production begins) because the expenditure is for future benefit from the mineral extraction.
- Capitalized development costs are then amortized using the units-of-production (UOP) method as the resources are mined.

Note: Stripping costs incurred in the development stage should be capitalized if the stripping activity can be shown to represent a betterment to the mineral property. A 'betterment' occurs when the stripping activity provides access to sources of reserves that will be produced in future periods that would not have otherwise been accessible in the absence of this activity.

Stage 3: Development (cont)

Start-up cost treatment:

- ASC 720-15-15, "Start-up Costs" provides guidance on the financial reporting of the start-up costs. It applies to both developmental stage entities and established operating stage entities.

- Start-up activities are defined as, "those one-time activities relating to opening a new facility, introducing a new product or service, conducting business in a new territory, conducting business with a new class of customer, initiating a new process in an existing facility, or commencing a new operation." These costs include organization costs (activities associated with organizing a new entity).

Stage 3: Development (cont)

Start-up cost treatment (cont):

- Start-up costs include pre-operating costs such as:
  - Training costs, travel, recruiting costs.
  - Wages and benefits during non-production periods.
  - Nonrecurring operating losses.

Stage 3: Development (cont)

Start-up cost treatment (cont):

- Start of commercial production is the most important cut-off point.
  - Critical in determining if expenses should be capitalized or expensed, and when amortization should commence.
  - Production is defined for surface mining operations in ASC 930-330-20, "Accounting for Stripping Costs Incurred during Production in the Mining Industry"

Stages 3: Development (cont)

Development costs are capitalized and carried forward on the balance sheet because the expenditures are for the future benefit from the mineral extraction.

a) True
b) False

Stage 3: Development (cont)

- Mineral resources and reserves are the source of the value generated by mining entities needed to deliver future production
- Most important economic asset for a mining entity
- Source of future cash inflows from sales of minerals
- Provide the basis for acquiring funds through borrowings and additional equity financing

Stage 3: Development (cont)

- *Mineral Resource* is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal and industrial minerals in or on the Earth's crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction.

- *Mineral Reserve* is the economically mineable part of a mineral resource that, based upon appropriate assessments, and adequate information demonstrates that economic extraction could reasonably be justified.

Stage 3: Development (cont)

Mineral Reserves are usually categorized based upon the degree of certainty with which quantities can be estimated and the extent to which properties containing reserves have been developed:

1. Proven

2. Probable

3. Possible (Inferred)

Reserves are like Fish

Proven Developed: The fish is in the boat. You have weighed it. You can smell it. You are going to eat it.

Proven Undeveloped: The fish is on your hook, in the water close to the boat and you are ready to net him. You can tell how big he looks (they always look bigger in the water).

Probable: There are fish in the lake. You may even be able to see them, but you have not caught any today.

Possible (Inferred): There is a lake full of fresh water. Someone may have told you there are fish in the lake. Your boat is on the trailer, but you might go play golf instead.

Stage 3: Development (cont)

Reserve Disclosure:

- ASC 255-10-50, Financial Reporting and Changing Prices, encourages companies to disclose the following information on mineral reserves:
  - Estimated quantities of proven and probable reserves
  - Quantity of each mineral product believed to be commercially recoverable
  - Quantity of each mineral produced in the year
  - Quantity of reserves sold or purchased in the year
  - Average market prices of each mineral product

Stage 3: Development (cont)

Reserve Disclosure (cont):

- Audit Requirements: AU 558.05 provides that procedures should be performed for required supplementary information.
- Inquiry of management to determine the following:
  - Whether reserves were measured within prescribed guidelines
  - Whether method of measurement has changed
  - Significant assumptions underlying the measurement

Stage 3: Development (cont)

Reserve Disclosure (cont):

- SEC Industry Guide 7, "Description of Property by Issuers Engaged or to be Engaged in Significant Mining Operations", states that estimates other than proved or probable reserves shall not be disclosed in any document filed with the SEC unless:
  - Required by foreign or state law, or
  - Where such estimates have been provided to a person offering to acquire, merge or consolidate with the registrant

Stage 3: Development (cont)

What is the best indication that a mineral resource is present?

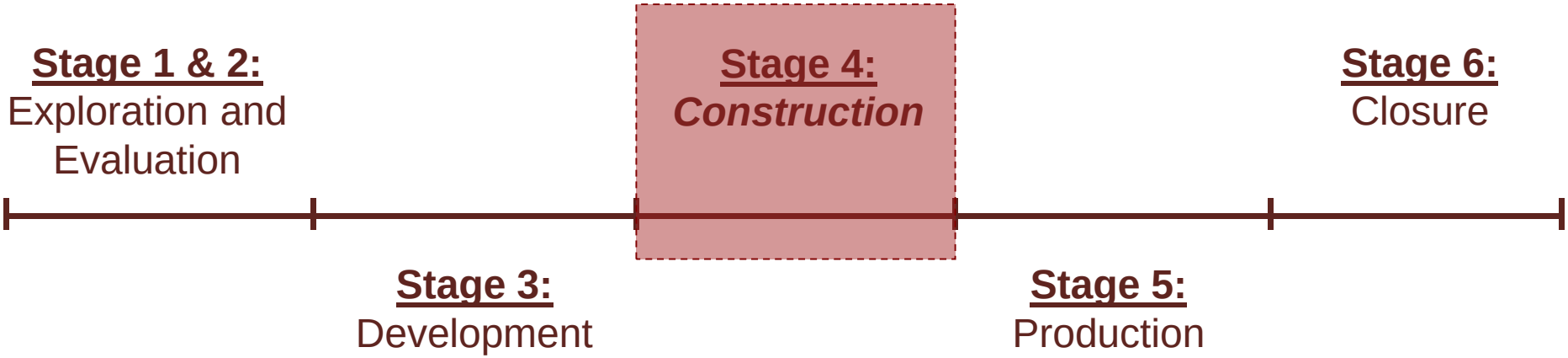
a) Outcrops show signs of mineralization.

b) Drill holes spaced closely together confirm a continuous high grade body of the mineral.

c) There's a ghost town nearby that the locals say was heavily populated by mineral speculators 100 years ago.

d) There are old waste dumps in the area.

Stage 4: Construction



Stage 4: Construction (cont)

- ***Construction*** means establishing and commissioning facilities to extract, treat and transport production from the mineral reserve.

- Construction facilities include:
  - Infrastructure
  - Buildings
  - Machinery
  - Plant and Equipment

Stage 4: Construction (cont)

Development Phase vs. Construction Phase

Development Assets

- Involves access costs and expenses (underground drifts).
- Expenditures are capitalized until the mine is commissioned.
- Costs are generally depreciated over the life of the mine.

Construction Assets

- Involves tangible assets (buildings, machinery).
- Tangible assets have a measurable life and start to depreciate as soon as they are used.
- May have a longer or shorter life than that of the mine.

Stage 4: Construction (cont)

Construction Phase vs. Production Phase

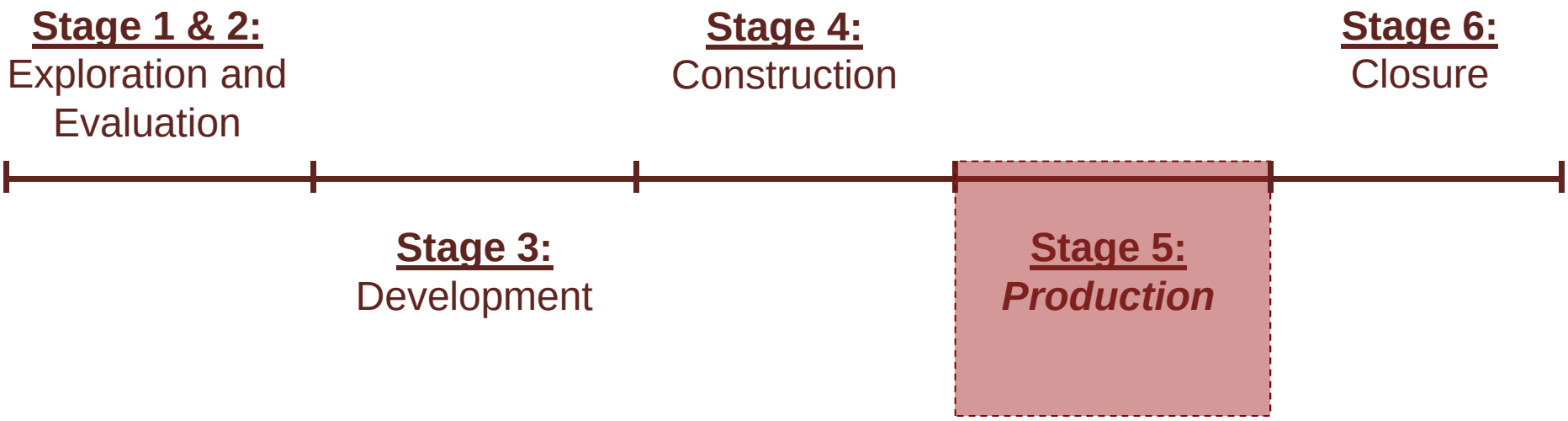
Cut-off is the point between the development/construction phase and production phase occurs when the mine has achieved commercial levels of production.

Development/Construction Phase: Costs are capitalized.

Production Phase: Costs are charged as operating expenses.

Underground Development Exception: Possible for costs to still be capitalized during the production phase

Stage 5: Production



Stage 5: Production

Production Phase

Production means the day to day activities of obtaining a saleable product from the mineral reserve on a commercial scale.

When are commercial levels of production achieved?

Stage 5: Production (cont)

Commercial levels of production may be based on a range of criteria such as:

- A nominated percentage of design capacity.
- Mineral recoveries at or near expected levels.
- The achievement of continuous production.

Stage 5: Production (cont)
Accounting for Production Expenditures

Production expenditures include all extraction & treatment costs:

- Depreciation Costs
- Amortization Costs
- Conversion Costs
- Transport Costs

Stage 5: Production
Inventory

All of the following are types of inventory usually carried on the balance sheet of a mining entity with the exception of:

a) Finished Goods
b) Mineral
c) Heap Leach
d) Stockpile

Stage 5: Production
Inventory

Components of inventory:

- Work in Progress
- Long term and short term stockpiles
- Heap Leaching
- Finished Goods

- How should inventory be measured and valued?

Stage 5: Production
Inventory Measurement

Work in Progress Inventory Measurement:

- Measure when two conditions are present:
  - A reliable assessment of mineral content is possible.
  - Cost of production can reliably be determined.

- GAAP is diverse as the assessment of mineral content and the reliable determination of production costs can vary from mine to mine.

Stage 5: Production
Inventory Measurement (cont)

Stockpile Inventory Measurement:

- Quantities are usually based on physical measurements.
- Grade is generally determined through assay testing.
- Common industry practice is to use two measurement methods.

Stage 5: Production
Inventory Measurement (cont)

What is Heap Leaching?

- A process by which a mineral can be economically recovered from low grade ore. A solution passes through the ore, which has been stacked on an impermeable liner and dissolves the mineral.

Stage 5: Production
Inventory Measurement (cont)

Heap Leach Inventory Measurement:

- Same difficulties of stockpile measurement with the added complexity of the metal recovery factor.
- Recognizing ore loaded on heap leach pads as inventory is normal mining industry practice (matching principle).
- Consider each pad separately to reduce variability.

Stage 5: Production
Inventory Valuation

Determination of inventory costs:

- All costs of purchase
- Costs of conversion
- Other costs incurred in bringing inventories to their present location and condition.

Stage 5: Production
Inventory Valuation (cont)

Costs of conversion include production overheads:

- Indirect Labor
- Indirect Materials (supplies and other small items not usually accounted for individually).
- Depreciation of processing plant and other equipment used in mining and processing ore.
- Light and power, heat and all other indirect costs of running the mine.

Stage 5: Production
Inventory Valuation (cont)

Other costs associated with mining included in the cost of inventory:

- Depreciation and amortization.
- Ongoing, or short-term development costs that are expensed as production costs.
- Royalties (if based on production).
- Freight costs incurred in transporting inventory to its present location.

Stage 5: Production
Inventory Valuation (cont)

Costs EXCLUDED from inventory:

- Administrative overheads that are not associated with the mine or the processing plant.
- Storage costs (unless they are necessary in the production process before a further production stage).
- Selling costs.
- Abnormal amounts of wasted materials, labor or other production costs.

Stage 5: Production
Inventory Valuation (cont)

GAAP requires that inventory be valued at the lower of cost or market.

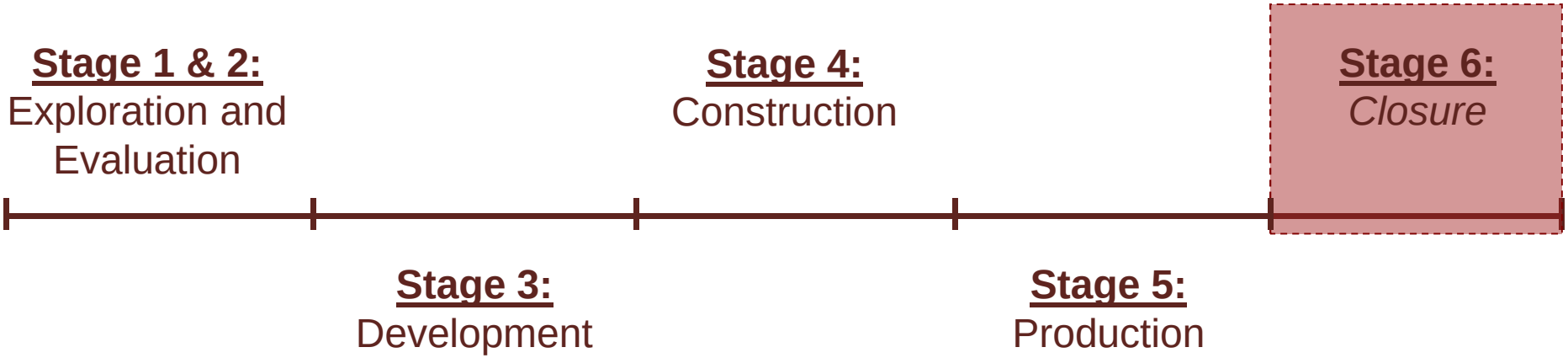
- In the event that the inventory costs plus costs to complete will not be recovered by sales proceeds, inventories should be written down to net realizable value.

Stage 5: Production
Inventory Valuation (cont)

All of the following should be included in the valuation of inventory with the exception of:

a) Depreciation and Amortization
b) Indirect Labor
c) Selling Costs
d) Freight Costs

Stage 6: Closure and Rehabilitation



Stage 6: Closure and Rehabilitation

Closure occurs after mining operations have ceased and includes restoration of the site.

Closure costs include:

- Employee Severance Costs
- Restoration
- Rehabilitation and Environmental Expenditure

Key Accounting Principles

Key Accounting Principles: Agenda

- ***Use of Estimates***
- Joint Ventures
- Development Stage Enterprises
- Depreciation and Amortization
- Deferred Stripping
- Revenue Recognition
- Impairment and Disposals
- Environmental Obligations
- Asset Retirement Obligation

Key Accounting Principles:
Use of Estimates

The preparation of mining company financial statements requires us to make estimates and assumptions. The most significant ones are:

- Quantities of proven and probable mineral reserves
- Classification of mineralization as either reserves or non-reserves
- Fair values of acquired assets and liabilities assumed in business combinations
- Future commodity prices
- Future cost of asset retirement obligations
- Amounts and likelihood of contingencies

Key Accounting Principles:
Use of Estimates (cont)

Using these and other estimates and assumptions, we make various decisions in preparing financial statements including:

- The treatment of expenditures at mineral properties prior to when production begins as either an asset or an expense
- Whether tangible and intangible long-lived assets are impaired, and if so, estimates of fair value of those assets and any corresponding impairment charge
- The useful lives of tangible and intangible long-lived assets and the measurement of amortization
- The fair value of asset retirement obligations

Key Accounting Principles: Use of Estimates

Why is understanding the company's use of estimates so important?

a) Estimates prepared by mining companies involve complex areas such as reserves, useful lives and asset retirement obligations
b) Individuals preparing these estimates must use significant judgment
c) All of the above
d) None of the above

Key Accounting Principles: Agenda

- Use of Estimates
- ***Joint Ventures***
- Development Stage Enterprises
- Depreciation and Amortization
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Key Accounting Principles:
Joint Ventures

(ASC 323-10-20)

Joint Ventures Defined:

- A corporate joint venture is defined as a corporation owned and operated by a small group of businesses as a separate and specific business or project for the mutual benefit of the members of the group.
  - Incorporated Joint Ventures
  - Unincorporated Joint Ventures

- Under US GAAP, a joint venture refers to jointly controlled entities, where the arrangement is carried on through a separate corporate entity.

Key Accounting Principles:
Joint Ventures (cont)

Joint Ventures in mining:

Joint Ventures are common in the mining industry due to the following:

- Significant capital requirements associated with new projects.
- Increasing number of projects in high-risk developing countries.
- Companies looking for a strategic investment.

Key Accounting Principles:
Joint Ventures (cont)

Joint Ventures in mining:

Generally, equity accounting must be used for incorporated joint ventures where ownership is between 20% to 50%. Proportional consolidation is permitted for unincorporated joint ventures where it is established industry practice to do so.

Key Accounting Principles:
Joint Ventures (cont)

Mine Development (cont)

Joint Control Entities (cont)

GAAP guidance on joint ventures can be found in ASC 930:

- ASC 930-810-45 provides guidance for investors in unincorporated entities such as partnerships and unincorporated joint ventures:
  - Proportionate gross financial statement presentation is not appropriate for an unincorporated legal entity accounted for by the equity method unless the entity is in the extractive industry where there is a longstanding practice of its use.
  - The investor's pro-rata share of assets, liabilities, revenues and expenses are included in their financial statements.

Key Accounting Principles:
Joint Ventures (cont)

General Considerations:

- Joint venture agreement usually requires an audit of the entity.
- Accounting policies used to prepare joint venture financial statements should comply with the policies adopted by the investor.
- Joint venture financial statements should be adjusted to eliminate any material unrealized profits and losses existing between joint venture and investor.

Key Accounting Principles: Joint Ventures

Why would a mining company be interested in pursuing a joint venture with another company?

a) Spread risk

b) Share costs

c) Gain access to a new country or territory

d) All of the above

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
- ***Development Stage Enterprises***
- Depreciation and Amortization
- Deferred Stripping
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Key Accounting Principle:
Development Stage Enterprises

- ASC 915, "Development Stage Entities", is applicable to the separate financial statements of development stage enterprises in all industries.
- An entity is considered to be in the development stage if it is devoting substantially all of its efforts to establishing a new business and either of the following conditions exists:
  a) Planned principal operations have not commenced.
  b) Planned principal operations have commenced, but there has been no significant revenue therefrom.

Key Accounting Principle:
Development Stage Enterprises (cont)

- Financial statements should include:
  - Financial position.
  - Results of operations (current year and cumulative to date).
  - Cash flows (current year and cumulative to date).
  - A description of the nature of the development stage activities in which the entity is engaged.

- ASC 915 provides for alternative presentation and disclosure only - US GAAP is still equally applicable for development state entities as it is for operating entities.

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
- Development Stage Enterprises
- ***Depreciation and Amortization***
- Deferred Stripping
- Revenue Recognition
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Key Accounting Principles:
Depreciation and Amortization (cont)

Most common methods of depreciation in the mining industry are as follows:

Depreciation method	Useful life	Expense
Units-of-production	The number of units of production expected to be obtained from or processed by the asset	Variable, based on level of production attributable to the asset
Straight-line method	The time period over which the asset is expected to be used	Fixed

Key Accounting Principles:
Depreciation and Amortization

Examples of depreciable assets typically subject to units-of-production method of depreciation:

- Deferred Mine Development
- Certain Property, Plant and Equipment

Key Accounting Principles: Depreciation and Amortization

Applying the units of production method of depreciation on a utility vehicle would be appropriate.

a) True

b) False

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
- Development Stage Enterprises
- Depreciation and Amortization
- ***Deferred Stripping***
- Revenue Recognition
- Impairment and Disposals
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Key Accounting Principles:
Deferred Stripping

(ASC 930-330-25)

- Stripping is the removal of overburden or waste to access mineralized material.
- Once production has commenced from a mine, production related stripping costs are accounted for as a cost of current production and, therefore, as a component of the cost of any inventory extracted from the mine and held at period end.
  - Applies to all types of inventory including stockpiles and in-process materials.
  - Standard applies only to stripping costs (waste or overburden) incurred in surface mining during the production phase of a mine.

Key Accounting Principles:
Deferred Stripping (cont)

(ASC 930-330-20)

- Production phase of a mine begins when saleable minerals are extracted (produced), regardless of the level of production. However, the production phase does not commence with the removal of de minimis saleable mineral material that occurs in conjunction with the removal of overburden.

Key Accounting Principles:
Deferred Stripping (cont)

Facts and circumstances must be considered when determining if a mine can capitalize stripping costs incurred at an existing operation. These include the following to be considered:

- Workings of separate geological structures/mineral deposits.
- Separate and distinct areas of mining operations contemplated by the mine development plans.
- Enlargement of existing operations vs. separate and distinct new operations.
- Expenditures for tangible property and infrastructure development

Key Accounting Principles:
Deferred Stripping (cont)

(ASC 930-330-25)

Capitalized or expensed:

- Generally, stripping costs should be accounted for as variable production costs that should be included in the costs of the inventory produced (that is, extracted) during the period that the stripping costs are incurred.
- Stripping costs should be capitalized if the stripping activity can be shown to represent a betterment to the mineral property. A betterment occurs when the stripping activity provides access to sources of reserves that will be produced in future periods that would not have otherwise been accessible in the absence of this activity.

Key Accounting Principles: Deferred Stripping

Where can one find the best authoritative definition of "production"?

a) SEC Industry Guide 7
b) ASC 930-330-20 "Accounting for Stripping Costs Incurred during production in the Mining Industry"
c) Google
d) The glossary section of a mining company's 10-K

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
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- ***Revenue Recognition***
- Impairment and Disposals
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Key Accounting Principles:
Revenue Recognition

(ASC 605-10-25)

Revenue recognition guidance is extensive under US GAAP and includes a significant volume of literature issued by various US standard setters.

Revenue recognition is considered to involve either:

- a) being realized or realizable – typically when products (goods or services), merchandise, or other assets are exchanged for cash or claims to cash.
- b) being earned – typically when the entity has substantially accomplished what it must do to be entitled to the benefits represented by the revenues

Key Accounting Principles:
Revenue Recognition (cont)

Revenue generally is (1) realized or realizable and (2) earned when all of the four criteria noted below are satisfied:

1. Persuasive evidence of an arrangement exists.
2. Delivery has occurred.
3. Seller's price to buyer is fixed or determinable.
4. Collectability is reasonably assured.

Key Accounting Principles:
Revenue Recognition (cont)

Gold Bullion Sales

1. Persuasive evidence of an arrangement exists.
2. Delivery has occurred.
3. Seller's price to buyer is fixed or determinable.
4. Collectability is reasonably assured.

Key Accounting Principles:
Revenue Recognition (cont)

Provisional Pricing

- Usually occurs with the production of concentrate
- Risks pass upon shipment/delivery at a preliminary price
- Provisional payments received on delivery, final payment on settlement
- Provisional payment can be as high as 90%

Key Accounting Principles:
Revenue Recognition (cont)

Concentrate Sales

1. Persuasive evidence of an arrangement exists.
2. Delivery has occurred.
3. Seller's price to buyer is fixed or determinable.
4. Collectability is reasonably assured.

Key Accounting Principles:
Revenue Recognition (cont)

Tolling arrangements

- Value added service such as smelting, washing, refining or transporting product on behalf of another company.
- Smelter is entitled to a treatment charge usually fixed by contract

Key Accounting Principles:
Revenue Recognition (cont)

Tolling arrangements, continued

Revenue recognition in tolling arrangements might be at point of either when:

- The metal is shipped to the smelter
- The metal arrives at the smelter

Key Accounting Principles: Revenue Recognition

In all circumstances, revenue is recognized upon shipment of goods.

a) True

b) False

Key Accounting Principles:
Revenue Recognition (cont)

(ASC 605-10-S99)

Other Issues:

FOB Destination:

- If title has not transferred, revenue recognition is not appropriate.
- In some contracts, title does not transfer until payment.

Key Accounting Principles:
Revenue Recognition (cont)

(ASC 605-10-S99)

Bill and Hold

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
- Development Stage Enterprises
- Depreciation and Amortization
- Deferred Stripping
- Revenue Recognition
- ***Impairment and Disposals***
- Environmental Obligations
- Asset Retirement Obligation

Key Accounting Principles:
Impairment and Disposals

(ASC 360-10-35)

Impairment: The condition that exists when the carrying amount of a long-lived asset or asset group exceeds its fair value.

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-35-21)

Impairment Indicators:

- Significant decrease in the market price of a long-lived asset.
- Significant change in which a long-lived asset is used.
- Significant change in the asset's physical condition.
- Significant change in legal factor, regulations or business climate.
- Substantial overruns of project costs.
- Current period or trend of operating or cash flow losses supported by a forecast that demonstrates continued losses.
- An expectation that the asset will be sold or disposed of before the end of its previously estimated useful life.

Key Accounting Principles: Impairment and Disposals

Which of the following would be considered an impairment indicator?

a) A favorable outcome in a lawsuit
b) A discovery of new proven and probable reserves
c) A three month decline in commodity prices
d) A trend of operating cash flow gains

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-35)

Long-Lived Assets Classified as Held and Used

Recognition of Impairment Losses:

- Carrying amount of the long-lived asset is:
  - 1 - Not recoverable
  - 2 - Exceeds its fair value

Key Accounting Principles:

(ASC 360-10-35)

Impairment and Disposals (cont)

Long-Lived Assets Classified as Held and Used

Recoverability Test:

- Carrying Amount > Sum of Undiscounted Cash Flows:
- Carrying amount of the asset at the date the test is conducted.
- Undiscounted cash flows from the use and eventual disposal of the asset:
  - Include only the future cash flows (cash inflows less associated cash outflows) that are directly associated with and that are expected to arise as a direct result of the use and eventual disposition of the asset.
  - Estimates of future cash flows used to test the recoverability of a long-lived asset (asset group) shall incorporate the entity's own assumptions about its use of the asset (asset group) and shall consider all available evidence.
  - Estimates of future cash flows used to test the recoverability of a long-lived asset (asset group) shall be made for the remaining useful life of the asset (asset group) to the entity.

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-35-17)

Long-Lived Assets Classified as Held and Used

Measurement of Impairment Loss:

- Impairment Loss = Carrying Amount – Fair Value*:
  - *Fair value is the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date.
  - Adjusted carrying amount becomes new cost basis.
  - Restoration of previously recognized impairment loss is PROHIBITED.

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-50-2)

Long-Lived Assets Classified as Held and Used

Impairment Disclosures:

- Description of the impaired long-lived asset.
- Facts and circumstances surrounding the impairment.
- Amount of the impairment loss.
- Caption in the income statement that includes the loss.
- Method used to determine fair value.
- The segment in which the impaired long-lived asset is reported under (if applicable).

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-45-9)

Long-Lived Assets Classified as Held For Sale

When can an asset be classified as held for sale?

1. Management commits to a plan to sell the asset.
2. The asset is available for immediate sale in its present condition.
3. An active program to locate a buyer has been initiated.
4. The sale of the asset within one year is probable.
5. The asset is being actively marketed for sale at a price that is reasonable to its current fair value.
6. It is unlikely the plan to sell the asset will be withdrawn.

All conditions must be met!

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-35-43)

Long-Lived Assets Classified as Held For Sale

Accounting While Held for Sale:

Asset is measured at the LOWER of its carrying amount or fair value less cost to sell.

Costs to sell include:

- Broker Commissions
- Legal and Title Transfer Fees
- Closing Costs

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-35-43)

Long-Lived Assets Classified as Held For Sale

Accounting While Held for Sale (continued):

- Recognize a loss for any initial or subsequent write-down to fair value less cost to sell.
- Recognize a gain for any subsequent increase in fair value less cost to sell, but not in excess of the cumulative loss previously recognized.
- Discontinue Depreciation

Key Accounting Principles:
Impairment and Disposals (cont)

(ASC 360-10-45-14)

Long-Lived Assets Classified as Held For Sale

Presentation and Disclosure:

- A long-lived asset classified as held for sale should be presented separately in the statement of financial position.

Key Accounting Principles: Impairment and Disposals

Assets that may be impaired should always be assessed individually.

a) True

b) False

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
- Development Stage Enterprises
- Depreciation and Amortization
- Deferred Stripping
- Revenue Recognition
- Impairment and Disposals
- ***Environmental Obligations***
- Asset Retirement Obligation

Key Accounting Principles:
Environmental Obligations

Summary: Entities are required to recognize a liability for obligations associated with environmental remediation liabilities that relate to pollution arising from some past act.

Laws and Regulations:

- Federal Law
- State Law
- Non U.S Law
- Foreign Law

Guidance: ASC 410-30 (Environmental Obligations)

Key Accounting Principles:
Environmental Obligations (cont)

(ASC 410-30-05)

Environmental Rehabilitation Liability Laws

- Superfund
  - Comprehensive Environmental Response, Compensation, and Liability Act of 1980
  - Superfund Amendments and Reauthorization Act of 1986

- Resource Conservation and Recovery Act

Key Accounting Principles:
Environmental Obligations (cont)

(ASC 410-30-05)

Laws intended to Control or Prevent Pollution

- Resource Conservation and Recovery Act of 1976
  - solid and hazardous wastes
- Clean Water Act
  - discharge of pollutants into the waters of the United States and to publicly owned treatment works
- Cross-State Air Pollution Rule
  - replaces Clean Air Interstate Rule
  - emission of pollutants into the atmosphere
- Emergency Planning and Community Right-to-Know Act
- Pollution Prevention Act of 1990

Key Accounting Principles:
Environmental Obligations (cont)

(ASC 410-30-05)

Potentially Responsible Parties

Superfund places liability on the following four distinct classes of responsible parties:

1. Current owners or operators of sites at which hazardous substances have been disposed of or abandoned
2. Previous owners or operators of sites at the time of disposal of hazardous substances
3. Parties that "arranged for disposal" of hazardous substances found at the sites
4. Parties that transported hazardous substances to a site, having selected the site for treatment or disposal

Key Accounting Principles: Environmental Obligations

Potentially Responsible Parties

A mining company that disposes of its waste at approved facilities, in accordance with all current requirements and has exercised "due care“ will not be liable for future environmental claims?

a) True
b) False

Key Accounting Principles:
Environmental Obligations (cont)

U.S. GAAP Requires the accrual of a liability if both of the following conditions are met:

- Information available before the financial statements are issued indicates that it is probable that a liability has been incurred at the date of the financial statements.

- The amount of the loss can be reasonably estimated.

Key Accounting Principles:
Environmental Obligations (cont)

(ASC 450-20-25)

Probability that a Liability Has Been Incurred:

Litigation has commenced or a claim has been asserted.

- It is probable that the outcome is unfavorable.

Key Accounting Principles:
(ASC 410-30-25)

Environmental Obligations (cont)

Ability to Estimate the Liability – Environmental Factors:

- Extent and type of hazardous substances.
- Choice of technology.
- Changing laws and regulations.
- Number of other potentially responsible parties.
- Financial condition of other parties.

(ASC 410-30-30)

Key Accounting Principles:
Environmental Obligations (cont)

Environmental Liability Considerations – Allocation:

- Identification of potentially responsible parties.
- Likelihood that other potentially responsible parties will pay their full share liability.
- The percentage of the liability that will be allocated to the entity

(ASC 410-30-30)

Key Accounting Principles:
Environmental Obligations (cont)

Environmental Liability Considerations – Cost Examples:

- Costs of compensation and benefits employees expected to devote a significant amount to the remediation effort.
- Costs to complete feasibility studies.
- Fees to outside engineers and consultants.
- Costs of contractors.
- Governmental oversight costs.
- Cost of machinery dedicated to the remedial action.
- to the entity

(ASC 410-30-50)

Key Accounting Principles:
Environmental Obligations (cont)

Environmental Liability Considerations – Required Disclosures:

- Nature of the accrual.
- Amount of the accrual (if necessary).
- Whether the accrual for environmental remediation liabilities is measured on a discounted basis.
- If any portion of the accrued obligation is discounted, the undiscounted amount of the obligation, and the discount rate used in the present-value determinations.

Key Accounting Principles: Agenda

- Use of Estimates
- Joint Ventures
- Development Stage Enterprises
- Depreciation and Amortization
- Deferred Stripping
- Revenue Recognition
- Impairment and Disposals
- Environmental Obligations
- ***Asset Retirement Obligation***

Key Accounting Principles:
Asset Retirement Obligations

Environmental Obligations vs. Asset Retirement Obligations

Environmental Obligations

- ASC 410-30
- Environmental remediation liabilities that result from the improper operation of a long-lived asset
- Environmental remediation liabilities that relate to pollution arising from some past act generally as a result of the provisions of environmental laws.

Asset Retirement Obligations

- ASC 410-20
- Environmental remediation liability associated with the retirement of a tangible long-lived asset that result from the acquisition, construction, or development and (or) the normal operation of a long-lived asset.

Key Accounting Principles: Asset Retirement Obligations

Which of the following events would typically give rise to an Asset Retirement Obligation?

a) A mercury spill at an operating mine site
b) The acquisition of a developed mining operation
c) An operating mine is found by authorities to be emitting an unacceptable level of pollution

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-25)

Recognition Criteria

An entity must recognize an ARO in the period in which it is incurred when:

- The entity has an existing legal obligation associated with the retirement of a tangible asset
- The amount of the liability can be reasonably estimated

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-30)

Initial Measurement Criteria

Liability can be estimated if any of the following conditions exist:

1. It is evident that the fair value of the obligation is embodied in the acquisition price of the asset
2. An active market exists for the transfer of the obligation
3. Sufficient information exists to apply an expected present value technique

(ASC 410-20-30)

Key Accounting Principles:
Asset Retirement Obligations (cont)

Initial Measurement Criteria

Present Value Technique:

- Estimated expected cash flows due to legal obligations
- ADD: Third party profit margins and costs
- ADD: Inflation and Mark Risk Factors
- Basis for ARO Calculation (Before Discounting)
- Discount using a credit-adjusted risk-free rate

(ASC 410-20-30)

Key Accounting Principles:
Asset Retirement Obligations (cont)

Initial Recognition and Measurement - Capitalize

Debit: ARO LT Asset $XXX

Credit: ARO Liability $XXX

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-35)

Subsequent Measurement:

Recognize Period-to-Period Changes Resulting From:

1. The passage of time
2. Change in estimate
   - Revisions to timing
   - Revisions in the original estimate of undiscounted cash flows

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-35)

Subsequent Measurement - Passage of Time

Debit: ARO Depreciation Expense	XXX	
Credit: ARO Accumulated Depreciation		XXX

- Amortize over the life of the asset
- Balance at end of mine life: $0

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-35)

Subsequent Measurement - Passage of Time

Debit: Accretion Expense	XXX	
Credit: ARO Liability		XXX

- Accrete over the asset life
- Accretion expense dependent on CARF Rate
- Accretion expense will not equal depreciation expense
- Balance at end of mine life: Original FV (Basis) for ARO Calculation

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-35)

Subsequent Measurement - Changes in Estimate

Increase or Decrease the ARO Liability and Asset:

- Upward Revisions in undiscounted cash flows – current credit-adjusted risk-free rate
- Downward Revisions in undiscounted cash flows– historical credit-adjusted risk-free rate

*Refer to Section 4580 of the ARM for more information and illustrations

Key Accounting Principles:
Asset Retirement Obligations (cont)

(ASC 410-20-50)

Disclosure

- General description of the ARO and the associated long-lived assets
- Fair value of assets that are legally restricted for purposes of settling ARO

(ASC 410-20-50)

Key Accounting Principles:
Asset Retirement Obligations (cont)

Disclosure, continued

- Reconciliation of the beginning and ending aggregate carrying amount of ARO, showing separately the changes attributed to the following:
  - Liabilities incurred in the current period
  - Liabilities settled in the current period
  - Accretion expense
  - Revisions in estimated cash flows

(ASC 410-20-50)

Key Accounting Principles:
Asset Retirement Obligations (cont)

Disclosure, continued

- If the fair value of an ARO cannot be reasonably estimated, that fact and the reasons therefore should be disclosed.
- Must determine an ARO even when uncertainty exists as to the timing of the obligation or method of settlement.

Key Accounting Principles: Asset Retirement Obligations

What do you use to discount upward revisions in ARO estimates?

a) Historical Interest Rate
b) Current Interest Rate
c) Historical Credit-Adjusted Risk-Free Rate
d) Current Credit-Adjusted Risk-Free Rate

Reclamation: Before/After

Yates Pile

Reclamation: Before/After

Mill Site

Reclamation: Before/After

Slurry/Sand Dams

Reclamation: Before/After

Slurry/Sand Dams

Summary

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Thank You