# Appendix 2

•Life Cycle Environmental Standards: excerpts fro Echo Bay Mines Environmental Management System Manual (work in progress)

# Standard No. LCES-1 Life-Cycle Environmental Standard for Exploration

#### Policy Statement

Echo Bay is an international mining organization with sound environmental policies for all phases of site development. The first phase of site development is exploration that leads to discovery of an ore deposit. Setting an appropriate standard in this initial contact is critical to our continued success and establishment of our environmental reputation. Echo Bay's exploration group will be the Company's ambassadors and must be prepared and equipped to implement the environmental stewardship program. Echo Bay will strive to maximize our exploration success while minimizing our environmental impacts.

Environmental issues will be integrated with other priorities addressed in the exploration plans and decisions. The exploration activities will need to meet an array of international and country-specific standards, and cope with broad issues related to the social, political and physical well-being of the inhabitants of the host jurisdiction.

These, and other factors, will be instrumental in achieving the goals and objectives of this environmental policy for exploration. The procedures to implement this policy must be consistent throughout the exploration group. The environmental policy for exploration is an extension of the Echo Bay revised Environmental Policy approved by the Board of Directors on February 15, 1996. The corporate policy clearly states Echo Bay's own principles and practices for environmental protection, and this exploration policy is the beginning of our focus on specific business units. The minimum environmental standard will be compliance with the existing environmental laws, rules and regulations for exploration applicable to the site. The exploration and environmental groups will be challenged by senior management to be innovative in their approach to integrate the environmental policy with the exploration goals.

#### Performance Expectations

The following general procedures will be the minimum requirements for all exploration activities. They are designed to establish a consistent and reproducible set of worldwide performance standards for implementation of the environmental policy for exploration:

- The exploration group in conjunction with the corporate environmental staff will develop strategies and gather intelligence, as appropriate, on a worldwide basis for the major gold belts.
- The strategies and intelligence will include information on not only the technical, mineral, policy and legal issues, but also the environmental, political and socio-economic issues which can be key success factors in the development of a strategic plan for exploration.
- The exploration group will notify the corporate environmental staff when they are planning the acquisition of a new exploration property by completing the Exploration Project Environmental Evaluation (EPEE) for each property under construction.

- As part of the exploration evaluation process, the exploration group should obtain pertinent environmental information, and factor this information into the preparation of the EPEE. In the case of international exploration properties, information should be obtained on the regulations and laws of the host jurisdiction. This information should also be factored into the EPEE.
- If the EPEE fails to identify any environmental fatal flaws and the exploration group wishes to pursue the exploration property further, they will notify the corporate environmental staff. An environmental due diligence report will be prepared for all exploration projects prior to entering into an agreement, which could egally bind Echo Bay to the property. The threat of environmental liability, responsibility for environmental remediation, and/or permittability issues requires that there be a reasonable amount of time to conduct the environmental review and to prepare the due diligence report.
- 6. The environmental due diligence report will expand upon the issues identified in the EERC and identify, as a minimum, applicable environmental regulations and other pertinent political and socio-economic information that could affect the exploration or development of the project.
- 7. The corporate environmental staff will support the exploration group in preparing the required exploration permit applications for the proposed exploration or development program. A compliance document will be prepared by the exploration group which includes the approved exploration permit/license, conditions/stipulations, and reclamation plan for the proposed exploration project prior to commencing surface disturbing activities. These documents will be prepared in both English and the host jurisdiction language as appropriate, so that all exploration personnel will understand the agreed upon procedures. The corporate environmental staff will assist as requested in the preparation of these documents.
- Environmental training and awareness programs will be developed by the corporate environmental staff for the exploration group which are applicable to each host jurisdiction and specific to each exploration site.
- 9. The corporate environmental staff will be responsible for the preparation, coordination and implementation of a proactive audit program which will document compliance, identify best management practices and evaluate potential risks which could be created by the exploration activities.

## Exploration Program Environmental Evaluation Table

Project Name
Date of Evaluation:
Evaluators:

Assessment Category	Weighting	Project Score	Project Weighted Score
Development Attitude of Local     Area and Region	3		
2. Existing Liability	3		
	3		
3. Distance from Population	3		1
Center			
4. Distance from Special Status	2		
Land			
5. Federal Land Involvement	2		
6. Regulatory Climate	2		
7. Project Proposal	2		
8. Biologic Considerations	1		
9. Hydrologic Considerations	1		
10. Geochemical Considerations	1		
Total Score			

Note: Maximum score is 100 for the least risky and most permitable project. Maximum score per category is 5, minimum score is 0.

With reference to the Exploration Project Environmental Evaluation table for (project name), the project weighted score totaled (number). The conclusion at this point is that permitting in this area should be (routine, some effort, difficult) and the environmental risk is (high, medium, low). If EBX chooses to pursue this project, a thorough due diligence should be performed to confirm or contradict this conclusion.

Assessment Category 1 Development Attitude of local area and region.

Assessment Category 2. Existing Liability.

Assessment Category 3. Distance from Population Center.

Assessment Category 4. Distance from Special Status Land.

Assessment Category 5. Federal Land Involvement.

Assessment Category 6. Regulatory Climate,

Assessment Category 7. Project Proposal.

Assessment Category 8. Biologic Considerations.

Assessment Category 9. Hydrologic Considerations.

Assessment Category 10. Geochemical Considerations.

## Scoring System for each of the Assessment Categories in the Table

### 1. Development attitude of local area and region (Anticipated level of public support)

Ranking	Criteria
1	0-20%
2	20-40
3	40-60
4	60-80
5	80-100

### 2. Existing Liability

Ranking	Criteria
0	existing SUPERFUND site
1	site is on National Priorities List (NPL), being considered for
	SUPERFUND listing
2	site is on CERCLIS list for review
3	extensive reclamation and/or contamination liability (tailings pond, ARD, etc.), but no formal listing
4	some existing reclamation and/or contamination liability; no listing
5	"greenfield" site; no prior activity

#### 3. Distance from Population Center

(This category attempts to incorporate proximity to populations centers, the size, character and demographics of the population center and project access routes)

Ranking	Criteria
1	within one mile of a population center or residences
2	
3	within five miles of a population center where access to the project is through town
4	
5	remote from any population center

#### 4. Distance from Special Status Lands

(Special Status lands would encompass environmental sensitive or protected areas, such as wilderness areas, wild and scenic rivers, national and state parks, ....... etc.)

Ranking	<u>Criteria</u>
1	within special status lands
2	adjacent to or within the view-, water-, noise- or air-shed
3	outside of view-, water-, noise- or air-shed, but within [some distance]
4	no special status lands within [some distance]
5	no special status lands within [some distance]

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#### 5. Federal Land Involvement

(This encompasses potential "major federal action" issues such as COE/wetlands, NPDES, PSD and federal land ownership)

Ranking	Criteria	
1	federal lands; multiple potential "major federal actions"	
2	federal lands; one potential "major federal action"	
3	federal lands; no "major federal actions"	
4	no federal lands; potential "major federal actions"	
5	no federal lands; no "major federal actions"	

### 6. Regulatory Climate

(Local, regional, state, national)

Ranking	<u>Criteria</u>
1	active levels of regulatory authority maintain an unfavorable climate for
	development/mining projects; recent comparable projects had extensive
	permitting delays
2	previous mining in the area has created contentious permitting environment
3	active levels of regulatory authority have a neutral climate for
	development/mining projects; recent comparable projects were permitted
	within generally expected or average timeframes
4	unknown; to prior mining activity
5	active levels of regulatory authority maintain a favorable climate for
	development/mining projects; recent comparable projects were permitted
	within an accelerated timeframe

#### 7. Project Proposal

(Type of mining and processing proposed)

Ranking	Criteria	
1	open pit, mill w/cyanide, heap leach	
2	open pit, heap leach	
3	open pit, mill w/floatation only	
4	underground, mill w/cyanide, heap leach	
5	underground, mill w/floatation only	

### 8. Biologic Considerations

(Also candidate and sensitive species (i.e. TEC/S); breeding habitat; public perception i.e. ) "charismatic megafauna")

Ranking	Criteria
1	documentation of TEC species current use of habitat
2	documentation of TEC species historic use of habitat; high probability of
	current use

3	suitable TEC. S habitat present, sufficient prior surveys to indicate that presence of TEC species unlikely or transitory, sensitive species present but habitat/impacts are likely to be mitigable	
4	TEC/S habitat present but marginal; sufficient prior surveys to indicate that	
5	species presence is unlikely no TEC/S habitat present	
5	no TEC/S habitat present	
E =	endangered (in danger of extinction in all or most of range)	
T =	threatened (likely to become endangered in near future)	
C =	candidate 1 (not TE listed but sufficient evidence to support)	
	candidate 2 (may warrant TE listing, but insufficient biological information)	
S =	sensitive (population viability is a concern)	

# 9. Hydrologic considerations

Ranking 1	Criteria immediately adjacent to surface water; net positive precipitation; zero
	discharge not achievable
2	within watershed area (other considerations?)
3	within watershed area; net negative (or net neutral?) precipitation, seasonal distribution of precipitation likely to create significant water management issues; zero discharge questionable or very costly
4	within water shed and close to surface waters; net negative precipitation; zero discharge achievable
5	significant distance to surface waters; net negative precipitation; zero discharge achievable

### 10. Geochemical considerations

Ranking	Criteria
1	high net ARD potential; high material volume; net positive precipitation, high probability of post-mining water treatment
2	high ARD potential; moderate volume; materials management achievable at significant cost; net neutral precipitation; moderate probability of post-mining water treatment
3	moderate ARD potential; low to moderate volume; net neutral precipitation; materials management achievable at moderate cost; low probability of post-mining water treatment
4	low ARD potential; net negative precipitation; materials management achievable with low cost
5	ARD potential non-existent

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### Environmental Protection Program for Exploration

#### Program Objective

The exploration group will have an environmental protection program which will provide worldwide standards for all exploration activities. The following guidelines should be followed for typical exploration projects, with special consideration for site specific conditions which may require innovation:

- Survey access road alignment to minimize impacts · Design water crossings to minimize erosion
- Be sensitive to historic, cultural and religious sites
- Consider reclamation in development of access to the site Minimize surface disturbance and removal of vegetation
- Maintain protective operating distance from surface water
- Contain drilling fluids with pits or tanks
- Implement drill hole plugging and capping program Minimize commingling of aquifers by down-hole plugging
- Design and implement adequate plugging procedures to control artesian flows Reclaim/revegetate drill pad sites and roads (if not required for future use)
- Remove/cut drill pipe to ground level
- Clean-up all trash and materials transported to the site
- Prevent unauthorized access to the area Maintain a clean, safe campsite

# Life-Cycle Environmental Standard for Business Development

#### Policy Statement

Echo Bay is committed to a goal of environmental protection in the conduct of its international mining operations. Echo Bay's environmental policy for business development will require the preparation of an environmental due diligence report prior to the acquisition of or joint venture in a mining company or a mine property. The due diligence report will be prepared by Echo Bay's environmental management team.

#### Performance Expectations

The following performance expectations outline the minimum requirements to evaluate all business development agreements. The procedures are designed to establish a consistent worldwide due diligence review process before Echo Bay makes a legal commitment for a mining company or a mine property. The due diligence review is critical because of the potential for unlimited environmental liability associated with past or present mining and processing practices of the company or at the property under consideration

- 1. The business development group in conjunction with the corporate environmental staff will develop strategies and gather intelligence on a worldwide basis for the major gold belts.
- 2. The strategies and intelligence will include information on not only the technical, mineral policy and legal issues but also environmental, political and socio-economic issues which can be key operational success factors in the evaluation of potential acquisitions or joint ventures.
- 3. The business development group will notify the corporate environmental staff when they are considering an acquisition or joint venture to determine the need for a preliminary environmental report If a preliminary environmental report is required, a member of the corporate environmental staff will be part of the group selected to travel to the acquisition or joint venture property. The preliminary environmental report should identify potential and existing environmental liabilities that could affect the viability of permitting and/or operating the site.
- 4. Pertinent environmental information, regulations and laws that have been promulgated for mining and processing will be obtained by the corporate environmental staff during the evaluation trip This may be the best opportunity to obtain site specific environmental information or verify that the appropriate environmental guidelines were obtained.
- 5. An initial trip report related to the evaluation trip will be submitted to business development by the environmental staff within three (3) days after the evaluation trip. The final preliminary report will be submitted to business development within two (2) weeks after the trip.
- 6. If the acquisition or joint venture opportunity is to be pursued, the corporate environmental staff will evaluate the data and complete an environmental due diligence report during the option period, if one exists, for the proposed acquisition or joint venture. The preliminary

report previously submitted to the business development group will be the basis for the due diligence report.

- 7 In the case of an operating mine, the environmental due diligence report will, at a minimum, identify applicable environmental regulations, evaluate the existing environmental permit/license documents and other pertinent political and socio-economic information that could affect the ability to continue the mining operations. In the case of a non-operating property, the viability of permitting and operating the project, acquisition, or joint venture will be addressed.
- 8. The corporate environmental staff will be responsible for the review of the existing environmental permits or application documents required to operate the mine and processing facilities and coordinate contact with the agencies.
- 9. The Director, Environmental Affairs will submit a signed copy of the environmental due diligence report to the business development group. The report will be used in the decisionmaking process to complete or not go forward with the acquisition or joint venture.

#### Standard Number LCES-3

# Life-Cycle Environmental Standard for Development Projects

#### **Policy Statement**

Echo Bay's environmental policy for development projects is to assist in the design of the project in a manner which minimizes environmental impacts and facilitates the acquisition of permits on a timely basis to meet management's goals for gold production. An integral part of this policy will be the design of a successful regulatory permit approval program.

#### Performance Expectations

The performance expectations are designed to establish a consistent world-wide process for the successful development of mining properties. The critical success factor to evaluate the process will be the time and cost to obtain the initial permit. At the earliest stage, the corporate environmental staff will work with and support the assigned project manager by evaluating the permit process, designing the environmental baseline collection program and implementing the environmental documentation process. The following performance expectations outline the minimum requirements for development projects:

- A Level 1 development project could be the result of a successful Echo Bay exploration
  program at the site. In this situation, the corporate environmental staff would already have
  been involved in the environmental review process. The corporate environmental staff is
  responsible for the preparation of a preliminary environmental evaluation and/or a due
  diligence report for each exploration site.
- 2. A Level 1 or Level 2 development project which is the result of an acquisition or joint-venture completed by the business development group would have been reviewed by the corporate environmental staff. The corporate environmental staff is responsible for the preparation of a preliminary environmental evaluation report and/or a due diligence report before the business development group completes an acquisition or joint-venture
- 3. The development project group and the corporate environmental staff will meet to discuss the potential development process before the site is considered for the Level 1 review. The corporate environmental staff will prepare an environmental report which will provide guidance on the potential environmental constraints for development of the site.
- 4. A Level 1 initial feasibility study will commence with the development project group in conjunction with the corporate environmental staff preparing a conceptual development program for the proposed site. The program will have a brief description which includes the location, ownership and access to the proposed site. The program will have a tentative schedule for design, construction, mining and gold production. During the Level 1 process, a Plan of Study will be prepared by the corporate environmental staff which outlines the proposed environmental schedule and budget. The Level 1 project manager in consultation with the Director, Environmental Affairs will determine the level of effort and budget to commence and complete the environmental activities and collection of environmental baseline information for the site. The corporate environmental staff will be responsible for the

preparation of the environmental report. However, depending upon the scope and complexity of the project, an environmental manager may be appointed to the Level 1 project at this time. If this is the case, the appointed environmental manager will be responsible for the environmental work associated with the project.

- The Plan of Study will describe in detail the environmental baseline programs which will be implemented to satisfy the regulatory requirements and Echo Bay's Environmental Standards After the Plan of Study has been reviewed and approved, it will be submitted for review to the lead environmental agency and cooperating agencies. Agency concurrence for an extensive and time consuming environmental baseline study can eliminate questions of completeness at the time of the permit application submittal.
- 6. The development project group and the corporate environmental staff will schedule a review to discuss the project feasibility study and the environmental report for the proposed site. This will be an opportunity to consider critical environmental issues which may affect the engineering design. Potential alternative methods for mining, processing and waste rock disposal will be evaluated for the potential to reduce the environmental impacts and therefore improve the regulatory review process The Level 1 initial feasibility study will include an environmental section addressing the viability of permitting and operating the site. This environmental section will be prepared by the corporate environmental staff in consultation with the on-site environmental manager.
- 7. A Level 2 feasibility study should consider technical environmental constraints as well as the permittability of the project. A member of the corporate environmental staff will participate in the feasibility study so that there is environmental input to determine the schedule and budget to obtain the required permits. The staff will also be responsible for completion of the environmental baseline data collection program which will be required for the permits and for the preparation of an Environmental Impact Statement, if required. The Level 2 project manager in consultation with the Director, Environmental Affairs will determine the environmental schedule, budget, and the level of effort and staff required to complete the work. A Plan of Study will be prepared by the corporate environmental staff to document the schedule, budget and studies to be performed.
- 8. If a proposed site meets the criteria for Level 2, the corporate environmental staff or the onsite environmental manager will prepare an Environmental Operating Plan which will detail the permitting process and time-frame for potential regulatory approval. The Environmental Operating Plan will address the regulatory complexity of permitting the proposed project. It will evaluate the local, state, provincial, and/or federal permit requirements.
- 9. The Environmental Operating Plan and Plan-of-Study will guide the environmental permit process for development of the proposed project. As a part of the Environmental Operation Plan, a critical path schedule will be prepared and reviewed with the Level 2 project manager
- 10. During the Level 2 feasibility process, a bankable document will be prepared. The Environmental Operating Plan becomes an integral part of the bankable document. The corporate environmental staff will be responsible for determining the bank's requirements for environmental documentation and ensuring that the information is available for review by the bank.

11. If a decision is made to proceed with the project, and if not done previously, an environmental manager will be appointed to the project. The environmental manager will supervise and coordinate all environmental aspects of the project as outlined in the Environmental Operating Plan. A member of the corporate environmental staff will be selected to be the main contact with the project manager and environmental manager.

# Life-Cycle Environmental Standard for Operating Mines

#### Policy Statement

Echo Bay's environmental policy with regard to operating mines requires Echo Bay to design, construct, operate and reclaim all projects in compliance with applicable national and local regulations. In situations where environmental regulations are absent, or less than Echo Bay's standards, the best management practices will be applied to achieve environmental protection.

#### Performance Expectations

The performance expectations for operating mines will focus on environmental responsibility in four areas which are compliance, risk assessment, performance and community relations. The site manager will examine the best methods to utilize the skills of the environmental staff and employees to identify environmental risks and improve environmental performance. The following performance expectations outline the minimum requirements for Operating Mines:

- Operate the mine is in compliance with guidelines, rules, regulations, laws, permit conditions
  or stipulations, reporting requirements and consent orders. Identify and track regulatory
  requirements and disseminate the information as appropriate.
- Evaluate the effectiveness of the environmental management and control systems that are in place to manage the operational risks. Each operating mine will design a self monitoring program to verify and document that the systems are in place.
- 3. Identify future environmental issues and proposed legislation which could have a significant impact on the operating mine. Participate in the design and planning of effective responses to those issues that could impact the operating mine or require changes to the existing operations.
- 4. Determine if the operating mine is in compliance with its internal environmental, health and safety policies and procedures. In addition, each operation should evaluate the employee training and awareness programs to ensure that they are receiving adequate information, with appropriate training for individuals responsible for environmental compliance issues
- 5. Assess the hazardous material management practices of the operating mine on and the contracts for treatment, storage and disposal of the hazardous material. Each operation will dispose of wastes utilizing safe and responsible methods. The operating mine will prepare a pollution prevention plan, and recycle waste whenever possible.
- Identify environmental liabilities and ensure that they are properly addressed. Review and document that the associated financial bonds or accruals are adequate to implement the reclamation/closure plan.
- Planning and management will include environmental, health and safety considerations in the feasibility, planning, design, construction, operation and reclamation/closure of the operating

- 8. Review the environmental, health and safety performance and identify and implement methods for continuous improvement. Develop timely and effective management actions plans and procedures to address operating problems whenever they are identified.
- 9 Maintain open communications with the stakeholders concerning environmental issues. Each operating mine should develop and implement an employee awareness program which educates employees on the benefits of environmental stewardship.
- 10. Minimize the environmental, health and safety risks to the employees and the local communities in which the operating mine is located. This will be accomplished by employing safe technologies and operating procedures and by being constantly prepared for emergencies.
- 11. Develop and maintain an emergency response plan in conjunction with the local community for potential emergencies. Preparation of the plan will foster open and meaningful dialogue with the community concerning wastes, potential hazards and health issues which could be created at the operating mine.
- 12. Evaluate the effectiveness of the environmental management systems for the operating mine. Determine the operating risks from current environmental practices, which include identification and assessment of historical problems. Specify that all contractors comply with the operating mine's environmental, health and safety requirements, as well as the rules and regulations of the host jurisdiction.

Corporate environmental staff will schedule compliance audits on a regular basis to perform a detailed, site specific assessment of the operating mine. The audit should report the current status and ongoing management efforts to promote compliance and minimize civil and criminal liability for noncompliance. An action plan and follow-up program will be developed by on-site management and reported to corporate management to ensure that corrective action is taken on identified noncompliance issues.

# Life-Cycle Environmental Standard for Mine Expansion

#### **Policy Statement**

Echo Bay's environmental policy for mine expansion is to ensure that the expansion of operations at existing mines is conducted in compliance with all applicable environmental regulations and laws and that the expansion is designed to incorporate best management practices to reduce environmental impact.

#### Performance Expectations

The performance expectations for mine expansion are designed to ensure that the permitting process is completed in a timely and cost effective manner and that environmental impact is minimized. In order to achieve this goal, the mine site management will be required to meet the following performance expectations:

- The mine engineering staff will prepare a preliminary design report for all proposed expansion activities. The activities could include mining, waste rock disposal, milling, tailings disposal and/or heap leach processing. Any proposed expansion activities which will impact the environment should be included in the preliminary design report. The mine manager will discuss the preliminary design report with the environmental staff at the mine to obtain their input.
- 2. The mine manager will discuss the proposed expansion with the Director, Environmental Affairs, and furnish him with a copy of the preliminary design report. The on-site environmental staff with assistance from the corporate environmental staff will review the preliminary design report and prepare a brief environmental report. This report will evaluate the permit requirements for the proposed expansion, determine if there are any fatal flaws and make permitting recommendations. A schedule of the permit timetable for the proposed expansion will also be included.
- 3. The mine manager and Director will discuss the report and assessment. If the proposed expansion is permittable, the mine manager will instruct the engineering staff to prepare a engineering design report. The complexity of the expansion and mine staff availability will determine the make-up of the permit team. The on-site environmental staff will be responsible for the permit process for complex mine expansion projects. Corporate environmental staff will assist the on-site environmental staff as required.
- 4. A permit team representative will contact the regulatory agencies to discuss the proposed expansion and if necessary, a meeting will be scheduled to present the expansion plans. The presentation discussions will include the permit process, potential baseline data collection and project timetable.
- 5. The permit team in consultation with the agencies will determine if addition environmental baseline data must be collected to support the permit application submittal. If baseline is required the permit team will coordinate the collection work and hire consultants to perform

field studies, if necessary

- The permit team will be responsible for coordination and preparation of the permit application submittal.
- Once approvals are received, the permit team will work with on-site environmental staff to
  ensure that permit requirements, conditions and stipulations are incorporated into the site's
  environmental compliance assurance program.

# Life-Cycle Environmental Standard for Reclamation/Closure

#### **Policy Statement**

Echo Bay recognizes the importance of traditional land uses and respects the laws and customs of the host jurisdictions in which the operating mines are located. Echo Bay's environmental policy for reclamation/closure is to design and implement a reclamation/closure plan which complies with existing laws and regulations and returns the land to a productive post mining land use. In situations where environmental regulations are absent, or less than Echo Bay's standards, best management practices will be applied to achieve rehabilitation of sites disturbed by mining operations.

#### Performance Expectations

The performance expectations are designed to establish world-wide standards for the rehabilitation of areas disturbed by past, present or future mining operations. The following performance expectations outline the minimum standards for reclamation and closure of the mining operations:

- All mines should be designed and operated in a manner which facilitates closure and reclamation. Whenever possible, concurrent reclamation should be carried out to minimize the reclamation liability at the end of the mine life.
- An engineering design will be prepared for post mine land use which considers existing topography, drainage patterns and final contours, including the potential for erosion and subsidence.
- A chemical and physical characterization study will be prepared on all materials to be used in the backfilling, grading, capping and topsoiling of disturbed areas. This would include topsoil, subsoil, overburden, wasterock, tailings and heap leach piles.
- The characterization study will identify the potential toxicity, the chemical leachability and the special handling techniques that might be required to segregate and isolate these hazardous materials.
- Hydrogeologic studies will be performed to characterize the groundwater system associated with the disturbed area and closure methods required to minimize long-term affects on the groundwater.
- 6. Hydrologic studies will be performed to characterize the quality and quantity of the surface water. The reclamation/closure plan will be developed to minimize the long-term affects on the surface water system from ARD, metals, erosion, runoff and sedimentation.
- 7. A reclamation plan will be prepared which will consider the legal requirements for reclamation, as well as cultural and social end uses of the site. If revegetation is the final surface treatment, the plan will evaluate the all aspects required for successful regrowth.

- The reclamation/closure plan will be designed to minimize or eliminate the need for long-term monitoring, maintenance or perpetual care.
- 9. Where possible, the operations will be designed for closure.
- 10. The reclamation plan should be in place prior to commencing operations and should be reviewed on an annual basis. Costs to implement the reclamation plan should be calculated by qualified personnel and reviewed on an annual basis. These costs should be accrued by the mine on a per ton or per ounce basis. Reclamation accruals should also be reviewed on an annual basis. Based on the aforementioned reviews, reclamation bonds, where required, should be reflective of the actual costs to implement the reclamation plan and should be adjusted as required.