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2.0 Due Diligence – Introduction

Successful exploration creates new wealth, returns value to investors, minimizes negative impacts to people and the environment and makes a positive contribution to local communities and society at large. The first key step to achieving these goals is project due diligence. Before initiating any new exploration project and before progressing to the next stage of exploration on an existing project, explorers should conduct project due diligence. Project due diligence is a risk management process designed to enable you to decide if you should proceed with a project and, if so, how to do so in a way that enables you to manage the social, economic and environmental risks. Effective project due diligence will save you time, money and many problems – possibly even save the project itself. It will enable you to identify, manage and control your risks to prevent harm, make better financial and operational decisions and meet your commitments to your stakeholders.

Due diligence helps to gain more realistic timeframes for project activities and processes, which can in turn be transmitted through communications strategies to stakeholders. This translates into better management of stakeholder expectations. Better management of stakeholder expectations contributes to reducing some of the constraints faced by exploration companies (i.e., social pressures).

The rigour of assessment that needs to be undertaken at the screening and planning levels will depend on the scope, scale and potential for social, environmental and economic impacts. The more complex the activity and the greater the anticipated impacts and risks, the greater the level of effort that should be invested in collecting information to support the assessment and the greater the rigour in conducting the assessment.

Project due diligence should not be an exercise of ticking off the boxes and it is not a process of completely avoiding risk. It should be viewed as a process to achieve positive outcomes, not a process to identify the negatives that prevent opportunities from being pursued. Far from obstructing opportunities, project due diligence, if used effectively, can help explorers pursue higher risk opportunities, because the exposure to risk is better understood and managed. Project due diligence will be effective only to the extent to which it is embraced throughout the organization and integrated into existing management and planning processes. Exploration managers need to provide support, resources and direction downwards to help manage the risk effectively.

2.1 Project Due Diligence and Risk Management

Due diligence can be thought of as the effort one would expect a reasonably prudent person to exercise in similar circumstances to prevent harm. The key to the concept of due diligence is the foreseeability of the risk. If the risk can reasonably be foreseen, then steps must be taken to address it. Essentially, due diligence is a risk management process; therefore, the terms risk management and project due diligence are used interchangeably in this guidance. Risk management can be described as all the activities performed to identify, assess and control the uncertainties which may impact on an

Key Terms

due diligence is the effort made by an ordinarily prudent or reasonable person to prevent harm to another person or the environment

hazard is a situation which could lead to harm

consequence is the outcome of the hazard occurring (risk event); there can be more than one consequence from one event

probability is the extent to which the hazard is likely to occur

risk is a combination of the severity and likelihood of harm arising from a hazard [Risk = Probability X Consequence]

risk assessment is the process of identifying, estimating and evaluating risk

risk management is the process of identifying and analyzing risk and deciding on appropriate course of action to avoid or minimize the risks

risk control is the process of identifying, implementing and monitoring measures to reduce the risk associated with a hazard

e3 Plus: A Framework for Responsible Exploration is the expanded framework that now includes not only principles and guidance related to environmental stewardship, but also to social responsibility, as well as health and safety

exploration project's ability to achieve its aims, objectives and opportunities.

As previously stated, project due diligence is a risk based decision and planning exercise, designed to enable you to decide if you should proceed with a project and, if so, how to do so in a way that enables you to manage the social, economic and environmental risks. Project due diligence is not mandated by legislation; it is a voluntary management tool that is part of a prudent risk management strategy.

Project due diligence involves two interrelated risk management objectives: (1) to avoid or minimize risk to the project; and (2) to prevent harm to people and the environment.

2.2 What Is the Relationship between Due Diligence and Impact Assessment?

Project due diligence and social and environmental impact assessment are related exercises and share the same ultimate goal – preventing harm to people and the environment. Impact assessment also involves elements of both risk assessment and risk management. However, while social and environmental impact assessments can be undertaken voluntarily, in most countries they are typically mandated by legislation, as part of regulatory approval for large development projects. Impact assessment is a means to ensure that regulatory decision-makers have sufficient information on the social and environmental impacts of a project to decide if it should be allowed to proceed.

Impact assessment is the assessment of the possible social and/or environmental impacts – positive or negative – of a proposed project or action. The main difference between impact assessment and project due diligence is that impact assessment typically involves more detailed studies of the natural and/or social environment, to provide the context for assessing the impact of a proposed activity. Impact assessment uses data on baseline conditions and compares it to the anticipated impacts and the strategies proposed to minimize impacts, to determine whether the impacts of a project as proposed are acceptable.

Impact assessment is not typically necessary at early stages of exploration. In the latter stages of exploration, however, as the prospect of a mine begins to crystallize and/or as the scope and scale of exploration activities expand, explorers may be required by law to conduct impact assessments, or it may be prudent to voluntarily undertake more detailed impact assessment studies, to support project due diligence.

2.3 What Is Risk Management?

Risk management involves two main components: (1) risk assessment, which is the identification and evaluation of the risk of a given decision or activity; and (2) risk control, which involves the identification of controls (strategies and processes) to reduce the risk and the implementation, monitoring and review of those strategies. Each of the two components involves a series of activities

that vary in number, depending on the risk management methodology. For the purposes of project due diligence, a streamlined, straightforward risk management process works best. Figure 1 below illustrates the main steps that should be incorporated into the project due diligence process.

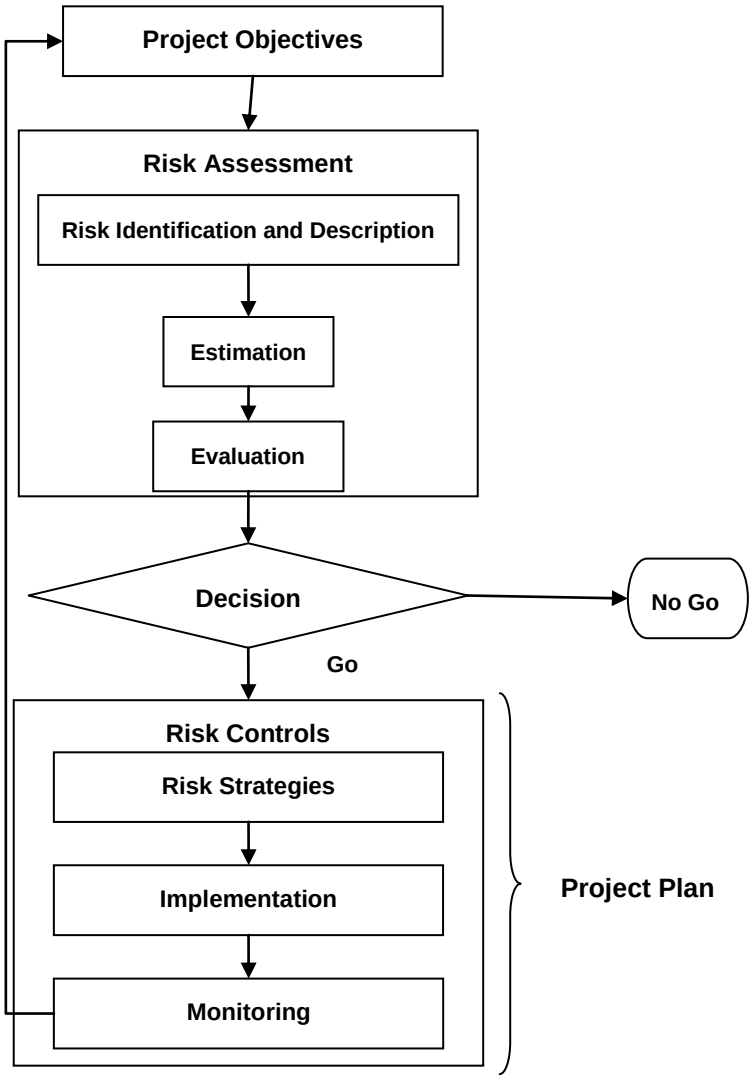

Figure 2: Project Due Diligence – Risk Management

2.4 The Basics of Risk and Risk Assessment

Risk is usually defined as the product of the likelihood (or probability) of the occurrence of a hazard and the magnitude of its consequence. As the level of risk increases (likelihood and the consequences), so too does the priority to respond (see Figure 2 below). However, in cases where the consequences to people or the environment are very high, you have an obligation to take action to prevent harm, even if the probability is very low. The type of action taken to respond will depend on a number of factors, including the extent of control one has over the activity giving rise to risk, available alternatives, costs, etc.

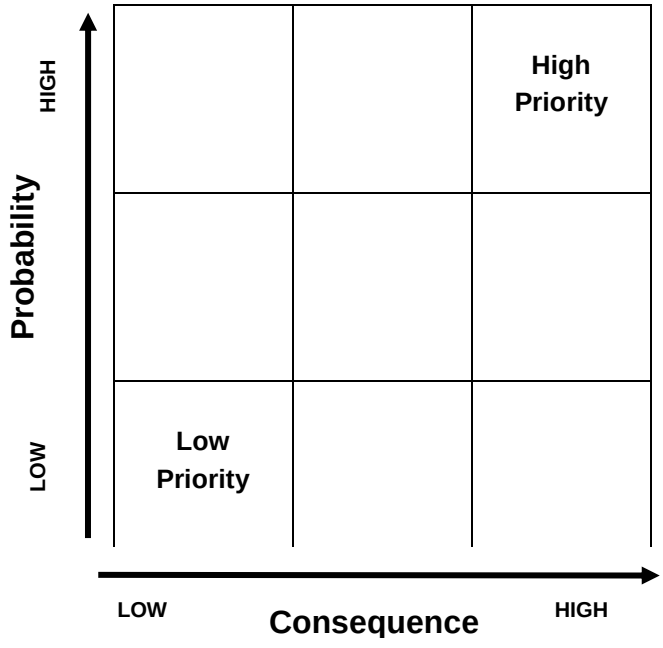

Figure 3: Risk Calculation

The scope and rigour of the methods used to assess risk and the quantity and type of information required to adequately characterize and evaluate the risk, must be appropriate for the decision being made. Therefore, a risk assessment that is used to support a decision where there is the potential of catastrophic consequences (e.g., the design of a large dam) will require more rigour and study, than a risk assessment that is used to support a financial decision involving a small investment.

Historically, risk assessment and risk management have focused on safety, natural hazards, business interruption and financial risks and, more recently, on environmental and social risks. In these areas, organizations have developed systematic processes and tools to identify and evaluate risks, so

that risk assessment could be conducted in an efficient manner. While specialized tools and processes have been developed for different types of risk assessment and while the rigour of risk assessment methodologies vary, the foundational elements of risk identification and assessment remain the same (see Figure 3 below). Risk assessment consists of three basic steps: (1) identification; (2) estimation; and (3) evaluation.

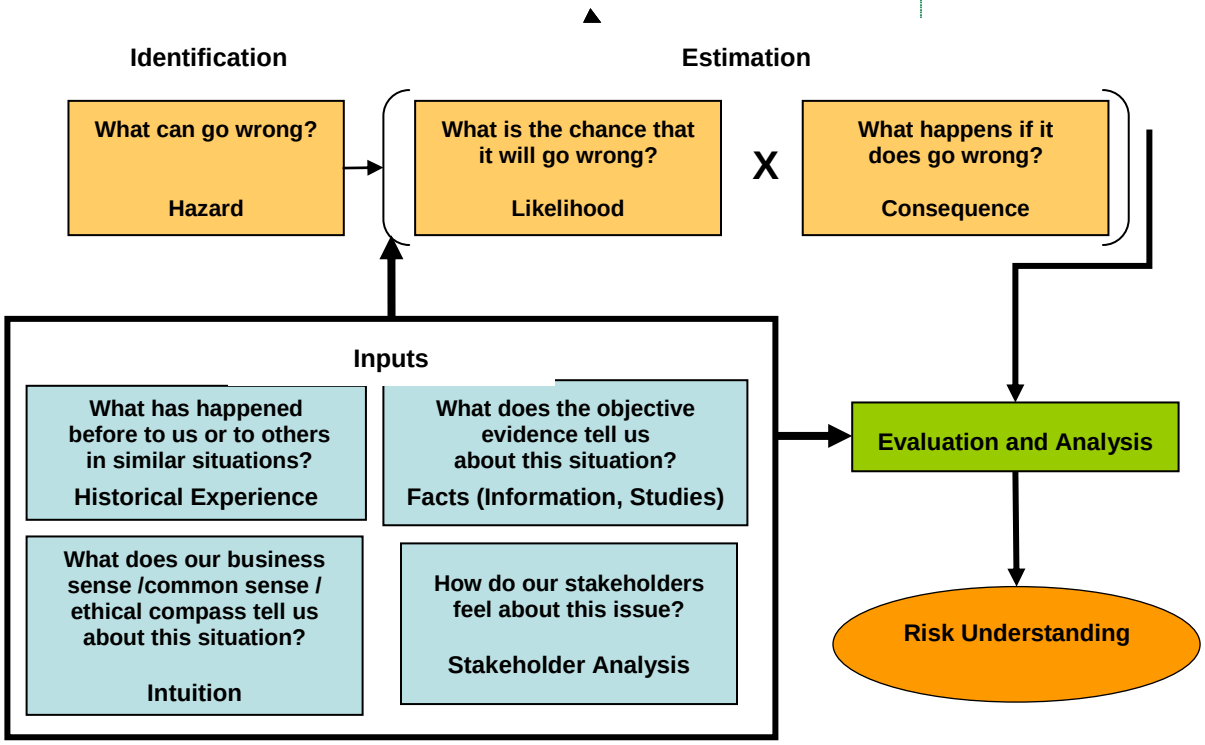

Figure 4: Foundational Elements of Risk Assessment

2.5 Risk Identification

Risk identification answers the questions: What can go wrong? How can it go wrong? For a project, any condition, situation or event that can occur and would jeopardize the project objectives constitutes a risk. Checklists are probably the most commonly used risk identification tools. Other risk identification methods include: meetings and brainstorming' discussion with stakeholders; background research; and reviews of activities. Risk identification is a crucial phase; if a risk is not identified, it cannot be evaluated and managed. The purpose of risk identification is to:

- identify all significant types and sources of risk and uncertainty associated with the project;
- ascertain the causes of each risk; and
- assess how risks are related to other risks and how risks should be classified and grouped for evaluation.

For the purposes of project due diligence, we suggest the following simple risk identification strategy:

1) Create a list of the various operational and support activities involved in the project and identify the social, environmental and economic impacts of these activities. You can use the Exploration Activity Tables and Risk Issue Tables in Appendix A of this section to help you get started in identifying the activities and their potential impacts.

2) Determine which stakeholders may be impacted and how they may be impacted. Consult the guidance on stakeholder analysis and the broader guidance on stakeholder engagement, to identify how best to collect information on stakeholders and which stakeholders may be impacted.

3) Conduct an environmental scan, to determine what existing factors (social, political, economic, cultural, and environmental) could present risks to the project and amplify or reduce the risk of project activities on society or the environment. Environmental scanning is a search for, and analysis of, information about relevant external forces, to see how these may affect your project. These include economic, environmental and political/legislative, as well as social and cultural competitive dynamics. This is sometimes also called a PESTLE (Political, Economic, Social, Technological, Legal, and Environmental) analysis.

To collect information for the risk identification, explorers should:

- **Search the Internet:** The Internet is a useful way to conduct simple "desktop" risk identification. Many on-line resources exist that can provide information for the environmental scan and help you conduct a coarse filter analysis of issues of concern related to mining and development in the area in which you propose to operate. Some of the on-line sources of information related to issues such as human rights, corruption, etc. are identified in the Social Responsibility Toolkit covering those sections. Tools as simple as Google Earth can provide information to help identify cultural heritage sites or threatened species. In many cases, on-line resources can also be used to identify the applicable laws and regulations

that explorers will need to adhere to. Websites that may provide useful information for risk identification are included at the end of this section.

- **Look to internal sources:** Employees within the organization may have direct experience in the area where the project will be undertaken. They can help identify and explain the issues that may influence social, environmental and economic risk.

- **Use external contacts:** Talking with people and agencies in the local area will give you the best local perspective. Some sources that can provide valuable information include: chambers of commence, industry associations, the local embassy, country trade representatives, contractors and agents, regulatory agencies and local developmental NGOs. Explorers should try and collect information from a number of sources, to ensure that they are getting a broad and balanced perspective.

- **Talk to potentially affected stakeholders:** There is no substitute for understanding firsthand the concerns of affected stakeholders and for ongoing dialogue that leads to respectful relations.

The extent of research that explorers will need to undertake for the risk identification depends on: the stage of exploration; the scope and scale of the exploration activity; and the social, political and legal context in which the activity is being undertaken. In the later stages of exploration, greater reliance should be placed on information from employees with experience on the project, local contacts and stakeholders. Also, in the later stages of exploration, social and environmental impact studies may either be required by law, or it may be prudent to initiate such studies voluntarily, to support project due diligence.

2.6 Risk Estimation

Risk estimation is the process of trying to determine the significance of the risk. Estimation serves three main purposes: (1) it helps the organization determine whether the risks are so significant, or cannot be managed, that the project should not be undertaken; (2) where the project risks can be accepted and managed, it helps set priorities for addressing them; and (3) in cases where there is no specific legislation, or other appropriate guidance to serve as a benchmark for managing the activities giving rise to the risk, risk estimation can also be helpful in deciding whether or not precautions are adequate.

Estimation can include both qualitative and quantitative assessments of the likelihood and consequence of the risk. The balance between qualitative and quantitative analysis will vary from project to project and will have to be determined by the availability of data and the need to remain cost-effective.

For most exploration activities, particularly in the early stages of exploration, it will not be cost-effective to conduct quantitative analysis and it will add little or no value to the effective management of the project. It is much more sensible and productive to restrict effort to a simple qualitative approach. In later stages of exploration, however, where the scope of activities that gives rise to risk and the potential consequences are likely to be more serious, it may make sense to adopt a quantitative analysis.

Tables 1 and 2 below illustrate a simple qualitative analysis that explorers can use

to estimate risk and determine the action that should be taken. This analysis is based on assessing probability and consequence and probability simply on the basis of high, medium or low and can be presented as a 3 x 3 matrix. Tables 3 and 4 below provide further guidance on factors for calculating the probability and consequences of a risk.

Likelihood or Probability
When determining likelihood or probability the following should be considered:

- **The frequency and duration of exposure:** How often does the activity occur (hourly, daily, weekly, etc.)? The greater the exposure, the greater the chance that something might go wrong.
- **The availability of risk controls and extent to which they are followed.**
- **Foreseeable abnormal situations:** Possibilities include emergency conditions, failure of equipment and abnormal weather events.
- **Past experience**: The absence of previous incidents or occurrences does not indicate that there is no risk, but it may indicate that incidents or occurrences are unlikely or highly unlikely. This is particularly true if the activity has been carried out frequently in the past in similar circumstances. Consideration should be given to the possibility that incidents may have happened but are not known.
- **Foreseeable human intervention:** Possibilities include unintended errors and deliberate violations.

Consequence of Harm
When determining the consequence of harm, the following should be considered:

- **Scale:** The number of units (people, groups, animals, species) that may be impacted, and the geographical extent of the impact.
- **Severity:** How serious the harm is, ranging from negligible to catastrophic or fatal.
- **Duration:** How long the impact will continue (permanent or temporary).
- **Mitigation:** The extent to which the impact can be mitigated. Note: Controls are preventive if they are directed at preventing the harm from happening; mitigation is corrective, directed at correcting harm.

Table 5: Risk Estimation Matrix

Probability/ Likelihood	**Consequence (Severity, Duration, Scope)**		
	Low (Slightly Harmful)	**Medium (Harmful)**	**High (Extremely Harmful)**
High (Probable)	Moderate Risk	Substantial Risk	High Risk
Medium (Possible)	Low Risk	Moderate Risk	Substantial Risk
Low (Remote)	Trivial Risk	Low Risk	Moderate Risk

Table 6: Risk Action Matrix

Trivial	• No action is required and no documents need to be kept

Low	• No additional risk controls are required unless:
	  • there is a legal requirement;
	  • there is a more cost-effective solution; or
	  • a further reduction in risk is possible at no additional cost.
	• Monitoring is required to ensure risks remain low and controls are functioning
	• Document actions taken

Moderate	• Establish controls to reduce the risk; costs of controls should be carefully assessed and the most cost-effective solution identified • Where the moderate risk is associated with extremely harmful consequences to people or the environment, you have an obligation to take action to prevent harm, even if the cost of controls are high • Risk reduction methods should be implemented within a defined time period • Monitoring is required to ensure risk controls are effective • Document actions taken
Substantial	• Project should not be started until the risk has been reduced • Considerable resources may have to be allocated to reduce the risk; this may affect the viability of the project • Where the decision involves continuation of a project, action **may** need to be taken to mitigate the impacts and risks associated with previous activity, even if the decision is not to continue with the project • Monitoring is required to ensure risk controls are effective • Document actions taken

High	• Project should not be started or continued until the risk has been reduced • If it is not possible to reduce the risk, the project should not be undertaken • Monitoring is required to ensure risk controls are effective • Document actions taken

Table 7: Risk Probability Analysis

	Probability Factors
High (Probable)	• Greater than 25 per cent chance of occurrence • Previous direct history of occurrence by the organization/in the industry • Potential to occur more than once or at regular intervals
Medium (Possible)	• Less than 25 per cent chance that it will occur • No previous direct history of occurrence, but has been known to happen elsewhere (similar types of circumstances) • Likely to be a single event or occurrence
Low (Remote)	• Less than 2 per cent chance that it will occur • Unlikely but not improbable • No previous direct history of occurrence and no known examples of occurrence

2.7 Risk Evaluation

Risk evaluation involves examining the acceptability (undesirability) of the various risks, with consideration to the various factors and tradeoffs influencing risk acceptability including: the needs, issues and concerns of stakeholders; the costs of risk controls; and the upside benefits of the project. This is the process by which the organization makes its decision to proceed or not proceed with the project.

2.8 Risk Control

Risk control strategies are required for risks that have been identified during the risk estimation and risk evaluation process as unacceptable (moderate to high). The exact control strategy will depend on the risk being considered, the context in which the risk occurs and the resources available to the organization. However, preferred methods of risk control generally fall within the classes presented below. There is a hierarchy of controls in terms of their effectiveness. The most effective controls are those that eliminate the situation, substance, condition, or activity that gives rise to the risk in the first instance. Where elimination strategies are not possible, methods that focus on reducing the probability of occurrence are preferred. Finally, at the bottom of the hierarchy are strategies that mitigate or reduce the consequences of the harm.

Unless you are able to eliminate the hazard giving rise to the risk altogether, you will normally use multiple control strategies to address a specific hazard situation. Ranked in the order that they should be considered and adopted, the preferred methods of risk control are:

- **Elimination:** As a first step, you should always look at how you can change or eliminate the process, activity, or product to eliminate the hazard. If the hazard is removed, all the other management controls (e.g., assessment, record keeping, training, auditing) are no longer needed, with subsequent time cost savings.

- **Substitution:** If the hazard cannot be removed, replace the hazard with something of a lesser risk. This may involve replacing a material (one chemical for another), process (alternative survey method), or even business relationship associated with the activity. As examples: Substitute vegetable based lubricants for carbon based lubricants; replace a project's security contractor with one who has a more solid reputation.

- **Redesigning:** Redesigning how an activity or process will be carried out can be used to reduce or eliminate risk. This is perhaps the most effective method available to explorers when dealing with social risks. As examples: Design a plan to deal with corruption issues related to obtaining land tenure and exploration approvals; establish a plan for obtaining consent from local peoples for access to land (free and prior informed consent)

- **Engineering:** Controls may be available to address hazards that have safety and environmental consequences. As an example: Creating a

berm around a potential source of spillage greatly reduces the risk of soil contamination.

- **Administration:** Administrative controls are "policy" or behavioural control types you can put in place. These are often the most cost-effective and in many cases are necessary to support other risk control strategies. The e3 Plus guidance provides recommendations on many of the administrative controls that explorers should implement that will help address project risk. As examples: Training project managers on issues related to human rights; requiring contractors to comply with the organization's Code of Conduct; implementing project oversight reviews; putting environmental and safe work practices into place.

- **Personal protective equipment (PPE):** Personal protective equipment means clothing, equipment and/or substances which, when worn correctly, protect part or all of the body from risks of injury or disease at work or in the workplace. PPE is a means of controlling safety risks.

2.9 Project Plan

Related e3 Plus Guidance

Stakeholder engagement

Identifying the risk controls is only the first step. Explorers should then develop a plan to guide the implementation and management of the project. The project plan provides the basis for integrating risk control strategies into existing management and operating practices. The project plan should include as appropriate:

- results of the stakeholder analysis and plans and strategies for stakeholder engagement, including strategies for engaging with NGOs;
- comprehensive schedule of activities;
- definition of risks identified and proposed controls for how they will be addressed;
- contingency plans to manage alternative risk scenarios;
- performance objectives for the project – these should obviously cover financial, strategic and operational objectives, but also need to include objectives related to social, environmental and safety performance;
- strategies for dealing with government agencies;
- strategies for engaging with other stakeholders;
- how project risks will be monitored;
- legal requirements, international standards, company policies, or best management practices (as applicable) that govern the activities being conducted;
- how compliance to legal requirements and conformance to company policies and standard will be monitored;
- security arrangements for personnel and contractors and strategies for dealing with conflict and the presence of illegal activities (e.g., drugs, smuggling);
- emergency response procedures;
- strategies for dealing with cultural difference and intercultural issues;
- communication plans; and
- reporting requirements, internal and external.

2.10 Monitoring and Review

See Additional *e3 Plus* Guidance on Monitoring and Management Review

Throughout the project, checkpoints should be established to review effectiveness of risk control strategies and conformance to the project plan. This does not require the establishment of separate special processes, but can

simply be rolled into the normal project review and progress checks that most operations conduct. In fact, integrating this into existing project management processes is preferred, since it institutionalizes the management of social, environmental and safety risk.

What is important is that social, environmental and safety issues be given equal importance to financial and operational issues, receive meaningful discussion and review and are not simply checked off. This means that performance measures need to be clearly articulated in the project plan to enable performance to be evaluated. The results of monitoring activities should be used to revise risk control strategies where there is indication that they are not effective. Reviews should be documented. Information from these reviews will also be helpful in devising risk control strategies for future projects.

Table 8: Risk Consequence Analysis

	Financial	Legal	Safety	Environmental	Social	Stakeholder/ Reputation
High	Impact to the company > (X value)	• Court proceedings • Criminal liability • Significant fines, penalties, damages	• Fatality • Serious injury • Permanent disability • Permanent health impacts	**Duration** • Long-term or permanent impact **Scale** • Large geographical extent/footprint • Impact beyond project site boundaries **Severity** • Lethal acute effect on plants or animals • Elimination or significant alteration of a resource, habitat, or unique and sensitive features • Loss or severe limitation on multiple use • Impacts cannot be mitigated • Significant cumulative environmental effects • Significant impacts on threatened and endangered species	**Duration** • Long-term or permanent impact **Scale** • Large geographical area • Large number of Individuals • Multiple communities **Severity** • Gross violation of human rights • Impacts cannot be mitigated • Cascading or cumulative impacts • Significant impact on vulnerable group	**Duration** • Long-term or permanent impact **Scale** • Concerns shared by large number of different stakeholders • National or international coverage **Severity** • Threatens social licence to operate in the project area • Protests by stakeholders (NGOs) • Differences will require lengthy negotiation and may not be resolvable

Table 8: Risk Consequence Analysis

	Financial	Legal	Safety	Environmental	Social	Stakeholder/ Reputation
Med	Impact to the company > (X value)	• Legal actions outside of court proceedings • Moderate fines, penalties, damages	• Minor injury, or series of small injuries • Temporary disability • Short-term health impacts	**Duration** • Intermediate duration **Scale** • Impact contained within project site boundaries • Moderate geographical extent/footprint **Severity** • Moderate impact on resource, habitat, multiple use, unique and sensitive features • No impact on threatened and endangered species • No cumulative environmental effects • No detectable effect on ecological function	**Duration** • Intermediate duration (months to few years) **Scale** • Local community • Single group or small number of individuals **Severity** • No gross violations of human rights • Impacts can be mitigated • Isolated impacts, not cascading or cumulative	**Duration** • Intermediate duration **Scale** • Stakeholder concern by single group or individuals • Local media coverage **Severity** • Stakeholder concerns are resolvable • Stakeholder concerns are moderate and do no threaten social licence to operate

Table 8: Risk Consequence Analysis

	Financial	Legal	Safety	Environmental	Social	Stakeholder/ Reputation
Low	Impact to the company > (X value)	• Small fines and damages • No legal actions • Warning or administrative sanctions	• Minor first aid for irritation	**Duration** • Temporary effect • Days to months **Scale** • Small isolated area **Severity** • Minor alteration to resource, habitat, multiple use, species • No impact on threatened and endangered species • No cumulative environmental effects • No detectable effect on ecological function	**Duration** • Temporary effect • Days to months **Scale** • Small isolated area • Few individuals **Severity** • Impacts can be easily mitigated • Impacts minor	**Duration** • Temporary effect • Days to months **Scale** • Stakeholder concern by few individuals • No media coverage **Severity** • Stakeholder concerns are resolvable • Stakeholder concerns are minor and do no threaten social licence to operate

Appendix A: Identifying Activities and Issues that Can Result in a Risk

Appendix A-1: Environmental and Social Factors that Can Influence Project Risk

The following tables contain a representative list of factors that can impact the environmental, social and economic risks of an exploration project. This is not intended as a checklist for project due diligence, but rather is designed to provide explorers with a scanning list to help them think about risks associated with their specific activity. Depending on the scale of the activity and the location in which it occurs, many of these factors will not apply. For example, many of the risk factors associated with government will not be of relevance for projects in OECD countries. In identifying the consequences of social and environmental risk, explorers should keep in mind that consequences of a situation often result in cascading impacts. For example, soil contamination can lead to loss of soil productivity that can result in impact to wildlife or loss of habitat integrity. Explorers also need to consider cumulative consequences, or whether multiple consequences taken together have the effect of compounding or increasing the severity of the impacts.

Table A-1: Sources of Environmental Risk and Potential Consequences

	Air Emissions	Water Discharges	Waste Generation	Unintended Releases	Land Use	Other	Resource Consumption / Extraction)

Sources	• Process emissions
	• Fugitive emissions
	• Transportation
	• Examples of types of emissions
	  • CO2, NOX and SOX emissions
	  • Halons and CFCs
	  • Dust and particulate
	  • Other emissions
		• Process Water
		• Sanitary Sewage
		• Storm water
		• Water diversion
		• Drill fluids
			• Hazardous waste
			• Mixed industrial waste
			• Mineral waste
			• Domestic waste
			• Spoil from trenches
				• Fuel
				• Chemicals and toxic substances
				• Sanitary sewage
				• Process water
				• Acid rock drainage
					• Surface disturbance (clearing, blasting)
					• Land conversion
						• Noise
						• Odour
						• Radiation
						• Vibration
							• Water
							• Electricity
							• Fuel
							• Minerals
							• Flora (trees, etc.)

Environmental Consequences	• Pollution of air quality • Climate change • Pollution of surface and groundwater quality • Loss/impairment of aquatic habitat • Loss of aquatic species			• Soil contamination • Impact on soil productivity • Impact on wildlife • Loss of habitat integrity • Threat to endangered species/species at risk • Loss of biodiversity			

Table A-2: Social Factors that Can Influence Project Risk

<table>
<tr><td colspan="2">Workplace</td></tr>
<tr><td>Workforce Issues
Diversity (e.g., ethnic, gender, racial)
Presence of child labour
Presence of forced labour
Workplace equity
Community representation
Skills development
Worker Rights
Freedom of association
Workplace conflict
Participation and representation</td><td>Conditions of Work
Salary and compensation
Hours of work
Environmental hazards (e.g., light, noise, heat, weather)
Travel and accommodation
Security of Personnel
Kidnapping, property theft, mugging, etc.
Confidentiality
Health and Safety
Refer to e3 Plus content on Health and Safety)</td></tr>
<tr><td colspan="2">Business Relationships</td></tr>
<tr><td>Respect for Human Rights
Overall human rights record
Basic understanding of human rights issues
Basic human rights framework
Workplace Issues
All items listed under Workplace (above) apply to business relationships</td><td>Ethical Conduct
Code of conduct
Overall record of conduct
Attitude towards bribery and facilitation payments
Collusion with civil servants
Conflict of interest</td></tr>
<tr><td colspan="2">Community</td></tr>
<tr><td>Land and Natural Resources
Changes in land use patterns
Historical exploration or mining land use
Free prior and informed consent
Land ownership disputes
Conflicts over access/use of natural resources
Loss of rights over, and access to, resources
Reliance on the land for subsistence
Fairness of management of natural resources (e.g. water)
Government exploitation of natural resources to fund conflict or power struggles
Displacement/relocation concerns
Access/risk of degradation to resources that support the basic essentials of life (e.g., water, food)</td><td>Culture
Cultural norms, social taboos
Presence of heritage and other sites of archaeological, cultural, or historical significance
Local language or dialect
Local tradition, rites and cultural practices
Cultural integrity (e.g., sense of place, aesthetics and heritage)
Impacts on shared customs, obligations, values, language or dialect, religious belief and other elements which make a social or ethnic group distinct
Security
Social tensions or serious divisions within the community
Crime rate and types of criminal activity</td></tr>
</table>

• Risk of forcing people into exile or threatening traditional ways of life • Community based ownership of resources • Inequalities among communities through land reform **Integrity (structure, cohesion, stability, character of the community)** • Leadership structure, capability and characteristics • Empowerment, decision-making and participation • Autonomy • Community infrastructure services, voluntary organizations, activity networks • The way people work, play and interact with family, friends and cohorts on a day-to-day basis; density of acquaintanceship • Family solidarity, family and friendship networks • Influx or outflows of temporary workers • Relocated populations • Transience/stability of local population • Economic development Social Equity (social, cultural, economic) • Attitudes towards women and minorities • Vulnerable segments of society, • Fairness of access to education, health care, jobs, economic opportunities (including women and minorities) • Regional inequalities • Increased concern about social justice issues in relation to minority or indigenous groups • Urban/rural gaps **Attitudes** • Trust and credibility in political and social institutions • Attitudes toward policy/project • Concerns about social well-being • Perceptions of risk, health and safety • Fears about the future of their community • Aspirations for their future • Perception of belonging, security and livability	• Criminal networks (e.g., drugs, natural resources, human trafficking), level of control of the area **Economic** • Economic vulnerability, dependency, loss of autonomy, • Unemployment level in the community • Opportunity cost (e.g., loss of other options, economic diversity) • Current and project economic growth, inflation and interest rates • Labor supply and costs • Employment creation (e.g., direct, indirect, temporary) • Prosperity and income levels • Opportunities for local sourcing of goods and services • Impact on local businesses • Inflationary effects • Tax revenue levels • Monetization of economy • Equitable access to opportunities and accrual of benefits • Competition for economic resources
Government	
Legitimacy/ Stability • Distribution of power and authority, check on executive power. • Representativeness of government (e.g., ethnic, religious, gender) • Respect for the constitution • Participative decision-making, free and fair elections	**Respect for Human Rights** • Overall human rights record • Adherence /implementation of commitments under international human instruments, • Basic human rights framework • Indigenous peoples policy and record (FPIC) • Protection of Indigenous peoples rights • Prosecution of human rights violations (e.g., torture,

- Equality of access to political activity
- Authority, power, and ability of national, regional, and local governments
- Likely changes in the political environment
- Historical resentments, independence movements, revolutionary or reactionary parties

Capacity (Local and National)

- Ability to deliver programs, meet basic needs
- Workload on institutions, local government, regulatory bodies
- Institutional knowledge in key issue areas (mining, human rights, Indigenous peoples, environment)
- Leadership capability and characteristics
- Size and structure of local government

Legal

- Requirements and related to:
  - Mining exploration and development
  - Employment/worker rights
  - Working conditions
  - Worker health and safety
  - Environment
  - Land tenure
- Adequacy of domestic laws to prevent harm to people and the environment
- Rule of law (e.g., independence/effectiveness of the judiciary)
- Enforcement of the law and legal decisions
- Equality before the law
- Possibility to undertake legal action against state

Media

- Censorship
- Independence of the media from partisan agendas
- Ability to reflect the views of all social groups
- illegal detention)
- Gender equality
- Protection of civil liberties including freedom of speech and of assembly
- Protection from religious, ethnic or cultural discrimination
- Privacy and freedom of private practices (e.g., dress code, private life)
- Recognition of minority languages and cultures
- Human rights abuses by security forces

Corruption

- Overall level of corruption
- Collusion between private sector and civil servants
- Facilitation payments institutionalized in the bureaucracy
- Existence of anti-corruption programs

Security

- Criminal networks (e.g., drugs, natural resources, human trafficking), level of control of the country/economy
- Conflict between ethnic communities
- Private armies/armed paramilitary groups
- Security forces conducting illegal activities (e.g., road blocks, extortion)
- Influence of security forces over political decision-making
- Presence of security forces, militias, war criminals, or rebel groups from neighbouring territories
- Arms trafficking

NGOs

- Protection of NGOs, right of association by the state
- Liveliness of civil society
- Ability to influence policy processes and communities

Exploration Table

The purpose of the Exploration Table below is to identify activities that may result in risk by stage of exploration. This Table is a scanning tool that can help explorers to undertake a risk management strategy. This Table does not attempt to offer guidance for undertaking the activity. It should also be noted that the sequence of activities presented here is a generic sequence that is not necessarily the sequence that would be applied by all explorers.

Table A-3: Exploration Activity Table

Stage of Exploration	Main Activity	Supporting Activities
Target generation (identify target areas)	Office based theoretical review	**Desktop research** • Review technical papers • Research databases • Brainstorm with colleagues • Purchase maps from government agencies • Contact knowledgeable persons in region or country
	Commodity research	**Desktop research** • Review technical papers • Research databases • Brainstorm with colleagues
	Economic, political and infra-structure research	**Desktop research** • Contact knowledgeable persons in region or country • Review technical papers • Research databases, brainstorm with colleagues
Land acquisition	Pegging, or notification of licences	**Community engagement** • Begin process of engagement **Land acquisition** • Research legal and regulatory agency requirements for title acquisition • Prepare and submit applications to explore • Conduct non-invasive reconnaissance **Staking** (directly on the ground or electronically) • Consult or hire local expertise and engage logistical support and surveyors • Obtain rights to prospect • Obtain field access permissions
Prospecting	Reconnaissance rock, soil and water sampling (including biological and chemical analysis in lakes, streams, and sediments)	**Community engagement** • Continue engagement and identify community development opportunities (e.g., hire locally to support sampling) **Field work** • Individual access to land • Non-invasive

Stage of Exploration	Main Activity	Supporting Activities
	Mapping	**Preparation/planning** • Home office assembles base maps and plans field program, field logistics and technical support **Access** • Use and maintain existing trails and roads • Use low flying aircraft and helicopters • Avoid using all-terrain vehicles off-road and establishing new trail cuts and survey grids, unless necessary and community has been engaged Field work • Examination and grab sampling of outcrops of rock and soil • Flag and GPS sample sites • Non-invasive **Accommodation** • Fly-camps or temporary accommodations • Fuel supply and storage for vehicles and aircraft • Waste management: solid waste landfilled; human waste buried or burned; other domestic waste burned or removed to off-site disposal facility **Community engagement** • Continue engagement; begin negotiation of community agreements; identify community development opportunities **Labour** • Local guides provide knowledge and protection **General opportunity** • Map cultural and archaeological features, and other social and geographic items and boundaries; special flora and fauna may be noted, together with related local knowledge and lore **Restoration** • Recontouring and revegetation of disturbed areas are needed if, in consultation with the community, the surface had to be disturbed • Removal of all work materials **Home office reporting**
	Geophysics	**Select detection method** • Magnetometer carried along parallel tracks across ground • Very low frequency electro-magnetic ground survey; electromagnetic surveys either on ground or from air • Induced polarization surveys, which involve placing lines of electrodes in the ground surface along survey lines • Gravity surveys along ground surface **Community engagement** • Continue engagement, begin negotiation of community agreements, identify community development opportunities **Field work** • Aim to be non-invasive • Manual digging • Line cutting for access for geophysical measurement across ground • Low flying aircraft/helicopters **Home office reporting**

Stage of Exploration	Main Activity	Supporting Activities
Target confirmation	Geochemical reconnaissance and sampling	**Community engagement** • Continue engagement, finalize and implement community agreements, contribute to community development **Plan sampling program** • From near or on surface rock sampling over a large area, to more intense invasive and deeper penetration by excavating trenches or test pits; develop sampling protocols **Field program execution** • Trench or pits excavation • Trench and pit support • Soil and rock stockpiled • Bulldozer use • Excavator use • Manual digging • Backfilling and revegetation with local species **Home office reporting**
	Drilling	**Community Engagement** • Continue engagement **Plan drilling program/select method** • Various methods may be used to attain various depths and to recover various types of sample ranging from chips to intact core sticks **Plan site logistics** • Equipment is usually large and heavy, although small portable rigs may be used for shallow drilling • Larger equipment moved onto site by helicopter, or manually. Drill equipment delivered by truck or tracked vehicle and move from point to point along simple access trails or larger right of way **Field program execution** • Increased requirements for access, labour, camp accommodation, fuel, etc. • Increased requirement for road access and/or helicopter to move rigs • Water supply for drilling; mud mixing and storage for drilling • Cutting and sampling core • Management of drilling fluids • Backfilling and sealing holes **Restoration** • Recontouring • Revegetation of disturbed areas, and • Removal of all work materials **Home office reporting**
Target testing	Chemical assaying	**Sample Testing** • Plan QAQC program and chain of custody • Transport samples from site to laboratory • Sample preparation and assay testing

Stage of Exploration	Main Activity	Supporting Activities
Resource[1] evaluation	Scoping or preliminary economic analysis	**Community engagement** • Continue engagement and community development, revisit community agreements, FPIC for next stages **Preliminary studies** • Engage engineering team and qualified person • Conduct site visit • Preliminary assessment of geological information, resource estimation and potential to develop economic mine • Present possible mining scenarios and associated concepts, preliminary estimate of cost to build and extract minerals of interest
	Commence baseline environmental studies	**Site environmental characterization** • Multi-disciplinary environmental studies require various field studies, involving sampling, surveying, mapping of multiple parameters (including acid rock drainage) • Weather stations may be installed • Requirements for access, labour, accommodation, fuel may increase • Characterization of alternative sites for mining and related project activity
	Commence socio-economic baseline studies	**Site socio-economic characterization** • Comprehensive socio-economic characterization of local and regional areas potentially affected by possible scope of project activity • Contact with and survey of local and regional populace, administrations, and industries
	Geotechnical	**Site characterization** • Obtain geotechnical engineering data in conjunction with geological data collection • Similar activities to geological data collection by drilling • Instrumentation installed in drill holes
	Metallurgical testing	**Ore and waste characterization** • Conducted offsite • Simulates processing methods • Conducted on representative drill samples of ore and waste materials • Refines estimates of rate of production and its cost • Refines process method • Refines prediction of any effluents and waste materials, such as tailings and slag
Advanced exploration	Bulk sampling (as required, to confirm metallurgical testing for the mill)	**Community engagement** • Continue engagement and community development Advanced exploration • Significant ground clearing • Excavation and stockpiling of ore and waste overburden soils and rocks • Design of environmental controls and monitoring • May require drilling and blasting • May be open pit or underground • Closure and reclamation plan (includes plan for acid rock drainage)

[1] *Resources in a NI 43-101 report describe "what is in the ground" in a first public announcement.*

Stage of Exploration	Main Activity	Supporting Activities
Reserve[2] definition	Pre-feasibility engineering[3]	**Option selection** • Additional site visits • Topographic surveying • Preliminary project designs • Compare alternatives • Reduce uncertainty in costing and in meeting other design objective
	Environmental, social and economic impact analysis	**Community engagement** • Continue engagement and community development, negotiation of revised community agreements, compensation/participation with stakeholders, traditional knowledge, FPIC for next stages **Assess environmental impacts** • Field studies to collect environmental data • Preparation of impact assessment by multi-disciplinary scientific experts • Review by government and peer specialists to assess and verify impact assessment • Government approval of impact assessment
	Feasibility study	**Detailed project evaluation** • Additional site visits, topographic surveying • The most advanced and sophisticated engineering analysis of options and costs • Provides basis for a decision to proceed and to seek financing
	Permitting, final design, procurement	**Construction preparations** • Prepare detailed management and monitoring plans • Negotiate plans with government agencies • Detailed final design • Place contracts for construction

[2] Only after the pre-feasibility level of understanding – including a financial evaluation – is undertaken can resources be converted to reserves.

[3] The pre-feasibility study may require a bulk sample (as described in the advanced exploration stage, above). As such, the bulk sample may occur after the pre-feasibility study and before the feasibility study.