

TERMS OF REFERENCES

For Environmental and Social Impact Assessment (ESIA) Tamakay Resources Inc. Tamakay Mining Project

1. Background to the ESIA

Tamakay Resources Inc (TRI) has prepared a Mining Plan of Operation as a requirement by the Guyana Geology and Mines Commission (GGMC) for the granting of a Mining Licence for the area in Tamakay, Middle Mazaruni River, and Administrative Region 7. The company, in accordance with the Environmental Protection Act 1996 is also required to conduct an environmental and social impact assessment study (ESIA) of the proposed project. TRI has engaged Mr. Rickford Vieira as technical consultant to conduct the ESIA.

2. Objectives of the ESIA

The objectives of the ESIA are to:

- ✓ Thoroughly document ecological baseline conditions (pre-mining conditions) of the study area and the socio-economic conditions of the effected communities.*
- ✓ Place the ecological baseline conditions of the concession area in the context of the surrounding region.*
- ✓ Inform, obtain and address contributions from stakeholders including relevant authorities and the public.*
- ✓ Assess in detail, the environmental and social impact that would result from the project*
- ✓ Identify mitigation measures that would reduce the significance of predicted negative impacts or enhanced predicted benefits of the proposed mining projects*
- ✓ Develop an appropriate Monitoring Plan for the proposed mining project based on the Mining Plan of Operation.*
- ✓ Develop a Conceptual Closure and Rehabilitation Plan for the proposed mining project addressing issued of post closure land use and projected effectiveness of rehabilitation.*
- ✓ Meet the requirements of the environmental regulatory agencies (EPA and GGMC) in Guyana as well as international best practice for project of this nature.*

The ESIA will identify the potential impacts associated with the development and then provide the measures that will be required to manage those impacts, which will be incorporated into an Environmental Management and Monitoring Plan. The ESIA, will be conducted by a multi-disciplinary team of experts with the stages identified as follows:

3. Phase Description

Screening/Scoping- Identification of key issues and concern that are to be addressed by the specialist studies

Baseline -Characterize current, broadly defined environmental conditions on and near the site to serve as a basis against which impacts can be measured and monitored

Assessment and Mitigation - Identification of negative and positive impacts. The potential spatial extent, severity, duration and probability of impacts are described along with mitigation actions.

Integration - Collation of specialist studies and assessments and the compilation of the ESIA Report.

Review The ESIA Report is reviewed by EPA, EAB, sector agencies and stakeholders

The ESIA process will be guided by the EPA Guidelines for the conduct of mining EIAs and international best practice guidelines for projects of this nature such as the World Bank and the Equator Principles.

4. Tasks

In the conduct of the ESIA the consultant team will undertake the following tasks:

- Assemble relevant baseline information on the project area including its geology, soils, hydrology, climate, surface water quality, noise, air quality and terrestrial and aquatic flora and fauna.
- Collect information on the socio-economic background of the project area including cultural resources.
- Provide a detailed description of the project including the Mine Plan, time schedules and phases of development.
- Identify the relevant laws, guidelines, regulations and standards that would define the operating framework of the project. In particular those of the Guyana Geology and Mines Commission and Environmental Protection Agency but including as well international guidelines as they relate to specific aspects of the project.
- Identify, as far as is possible, and assess the biophysical, socio-economic as well as cumulative impacts of the project which will include the transport and processing components of the project.
- Describe alternatives examined in developing the project, and identify other alternatives that would achieve the same objectives. This will include alternative methods of mining and processing, transport and the rationale for the preferred choice.
- Prepare an Environmental Management Plan that recommends measures to address those adverse impacts that can be avoided, or reduced to acceptable levels including a plan for monitoring during project implementation. The Management Plan will include a Mitigation Plan, Mine Reclamation Plan, Emergency Response Plan, Closure Plan, Monitoring Plan and provisions for Environmental Auditing.

5. Specific Issues to be addressed by the ESIA

- The consultant team will address the full range of issues as it pertains to the proposed project. Specific issues include:

- *A detailed description of the project area including maps showing the boundaries of the Project area, layout of current land uses of the surrounding areas and network of drainage systems.*
- *Current water quality data from surrounding streams which include pH, TSS or turbidity, conductivity, TDS, ammonia and sulphates and the establishment of fixed stations for continuous monitoring include the Mazaruni River*
- *Details on transport arrangements for ore from extraction site to processing*
- *Dust and noise management in particular from haul roads, crushing plant and stockpiles*
- *Impacts to aquatic and terrestrial flora and fauna*
- *Water Use and effluent/tailings management including potential for acid mine drainage*
- *Waste management*
- *Land use*
- *Cultural and archaeological resources*
- *Occupational Health and Safety*
- *Social and economic impacts to the local communities of Region 7 including direct benefits such as jobs, royalties and tributes, possible scholarships and apprentice schemes and other benefits.*
- *Cumulative Impacts of the project*
- *Presentation of the proposed Mine Plan with all relevant information concerning potential impacts on the environment and develop mitigation strategies to reduce the identified impacts.*
- *Presentation of a Sediment Control Plan as part of the Mine Plan*
- *A Monitoring Plan with focus on reclamation efforts and on discharge and receiving water quality limits with provisions for effluent discharge monitoring. This will be base on the results of the ESIA and the management plan*
- *A detailed Mine Reclamation Plan to encourage progressive rehabilitation with consideration for the eventual return of the land to the regional/governmental authorities.*
- *A Detailed Emergency Response Plan to respond to environmental emergencies and issues with respect to worker's safety as well as residents. The Plan will consider identification of emergencies, response mechanisms, personnel responsibilities and equipment and training requirements.*

6. Site Visit and Scoping

TRI will cover the cost of site visits associated with the conduct of the ESIA, public notices and other costs associated the ESIA.

7. ESIA Report Organization

Report Part			
Number	Title		

Section 1	Introduction and Project Description	1	<ul style="list-style-type: none"> • Introduction to the project and the proponent. • Background and settings
Section 2	Procedural Aspects	2 - 4	<ul style="list-style-type: none"> • Description of environmental and social management Description of the regulatory environment which the project will operate • requirements • Discussion of corporate policies. • Discussion of approach to ESIA
Section 3	Baseline Assessment	5 - 16	<ul style="list-style-type: none"> • Description of major project components and activities • Assessment of comparative attributes of alternative options.
Section 4	Impact and Cumulative Assessment	17 - 28	<ul style="list-style-type: none"> • For each baseline aspect such as surface water, ecology, noise: • Description of the existing conditions • Prediction of impacts • Evaluation of mitigation measures • Assessment of significance of impacts after mitigation
Section 5	Stakeholder Consultation	29 - 30	<ul style="list-style-type: none"> • Discussion of stakeholder consultation process and activities • Discussion of stakeholders issues • Description of planned external relations programme.
Section 6	Environmental and Social Management Systems	31 - 33	<ul style="list-style-type: none"> • Description of approach to environmental and social management • Description of formal management tools, including environmental management and monitoring and closure plan.
Section 7	Conclusions and Recommendations	34 - 36	<ul style="list-style-type: none"> • Summary of key impacts after mitigation • Conclusions • Recommendations
Section 8	Appendices	37 - 38	<ul style="list-style-type: none"> • References • Glossary of terms • Terms of Reference, • Background Information Document • Scope of Work • Summary of Impacts • Baseline Studies and other Reports • Sampling Protocols • Minutes of Scoping Meeting, photographs, maps, charts and other supporting documents.

8. Technical Team

Project Team Member	Position and Company	Role
Rickford Vieira	Independent consultant, Guyana, Mining Engineer	ESIA Coordinator, Technical Team Leader
Kalid Alladin	Independent consultant, Guyana, Social Assessment	Baseline studies, social and economic impact assessment,

		archaeology and land use.
Brian Sucre	Independent consultant, Guyana, Geologist	Baseline studies and impact assessment, geomorphology, landscape
Mike Tamessar	Independent consultant Biodiversity expert, fauna	Baseline studies and impact assessment, ecology. Fauna
Janice Bollers	Independent consultant Biodiversity expert, flora	Baseline studies and impact assessment, ecology, botany
Cyprian Moffett	Independent consultant, Guyana, GIS specialist	GIS mapping, topography
Devon Agard	Independent consultant, Guyana, Water Quality	Baseline studies and impact assessment, water quality monitoring and analysis.
Anton Dey	Independent consultant, Guyana Soils	Baseline studies soil assessment
Colin Sparman	Independent consultant, Guyana Noise	Baseline studies and impact assessment noise

9. Management of the ESIA process

The consultant will manage the overall ESIA process and will be responsible for the compilation and presentation of the ESIA Report. The consultant will plan, coordinate and execute all activities of the ESIA process and will assist TRI in the planning and execution of the public scoping meeting and public hearing if required. The consultant will provide updates to EPA, TRI and other relevant agencies on the ESIA process.

10. Duration

It envisaged that the draft ESIA can be completed within a period of four months after approval of the Terms of Reference by the EPA.

11. ESIA Submission

TRI will provide the following to the EPA:

- ✓ *Electronic copies of the ESIA report*
- ✓ *8 Copies of ESIA report with copies signed as per Act*