

BELIZE

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*Department of the Environment
10/12 Ambergris Avenue
Belmopan,
Belize, C. A.*

January 10, 2007

Mr. Jan Meerman
Belize Environmental
Consultancies Ltd
P.O. Box 208
Belmopan

Dear Mr. Meerman:

The Department of Environment approves the changes to the revised Terms of Reference (TOR) for an Environmental Impact Assessment to be conducted for Belize Natural Energy Limited for exploratory drilling in Georgeville Village in the Cayo District.

Kindly note that in accordance with the Environmental Impact Assessment Regulation, 1995 a draft copy of the Environmental Impact Assessment (EIA) should be submitted to the Department of Environment for vetting, prior to final submission for subsequent dissemination to the National Environmental Appraisal Committee.

Thanks for your kind attention and consideration.

Sincerely,

A handwritten signature in black ink, appearing to be 'A. ...', is written over a faint, illegible printed name. The signature is written in a cursive style.

Chief Environmental Officer
Department of the Environment

Cc: Director, Geology and Petroleum Department

TERMS OF REFERENCE AND FORMAT FOR EIA TO BE PREPARED FOR BELIZE NATURAL ENERGY EXPLORATORY DRILLING IN GEORGEVILLE, CAYO DISTRICT

This Terms of Reference (TOR) has been prepared following the scoping for the most critical issues that will need to be addressed for the proposed development which consists of exploratory drilling for hydrocarbons in Georgeville, Cayo District by Belize Natural Energy Limited (BNEL).

In the preparation of the Environmental Impact Assessment (EIA), the EIA preparers will need to focus on addressing the main areas of concern, such as:

FLORA AND FAUNA, HYDROLOGY, WASTE MANAGEMENT, AIR QUALITY, SOIL QUALITY, WATER QUALITY, ENERGY GENERATION, TRANSPORTATION, ARCHAEOLOGY, NOISE, ENVIRONMENTAL MANAGEMENT AND SOCIO-ECONOMIC FACTORS.

Scoping of these issues speeds up the EIA process, cuts down its cost, improves the quality of the development, and ensures that environmental concerns are clearly addressed.

This Term of Reference is divided into three (3) sections:

A. PROJECT DESCRIPTION AND PHYSICAL AND SOCIAL ENVIRONMENT

This section of the document deals primarily with information pertaining to the background of the project, and the physical environment within which it is proposed.

The EIA will need to address:

1 THE PROJECT DESCRIPTION AND PLAN

Maps at appropriate scales must be provided and with proper labels and legends to illustrate the general settings of project related development sites as well as surrounding areas likely to be environmentally affected. These maps shall include topographic contours, where available, as well as location of major surface waters, roads, parks or reserves, political boundaries, protected areas and existing adjacent land uses (tourism, agricultural, industrial). Additionally the following should be provided:

1. Give project location.
2. Provide the following plans:
 - a. Identify project location, ownership, and a description of the land tenure of project area
 - b. Identify access road(s) and transportation routes.
3. Describe the activities/facilities provided in the plans above.
4. Describe the processes involved in the exploratory drilling operations.
5. Provide outline of the overall management structure anticipated for the proposed

activities.

6. Describe the role of the project within BNEL's overall development plan and present the rationale behind the identification and selection of location (project justification).

2 THE PHYSICAL AND SOCIAL ENVIRONMENT

Provide details of the basic physical environment of the project site and zone of influence. This should include:

1. Topography: including degree of slopes, drainage patterns around project site, and flood hazard;
2. Include a map outlining the boundaries of zone of influence in relation to protected areas, surrounding villages and communities etc.
3. Climate, hydrology and meteorology: including rainfall average per year, prevailing wind patterns;
4. Geology: description of the characteristics of landform, land surface including exposed rock types, types of unconsolidated materials exposed (sediments), rivers, tributaries, if they can be determined by field mapping.
5. Provide information on the specific soil types in the proposed project area, including soil fertility and agricultural value
6. Consult with the Geology and Petroleum Department regarding the fulfillment of license requirements.
7. Provide a baseline on the current presence of hydrocarbons in the soils.
8. Determine the seismic history (if any) of the area.
9. Current land use of project site and adjacent properties including existing road infrastructure.
10. Physical description of surrounding receiving water bodies including creeks and rivers.
11. A description of the existing socio-economic conditions, giving a brief overview of the socio-economic background to the study area.

3 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

Provide any policy, legal or administrative issues that may have an impact on the proposed development. Describe the pertinent regulations, standards and policies, at the local and national levels governing environmental quality, health and safety and protection of sensitive areas. These could include cultural resources, protection of endangered or threatened species, siting, infrastructure development and land use control that may have an impact on the proposed development.

B. ENVIRONMENTAL ISSUES

This section of the document primarily targets the environmental issues of critical concerns based on information provided in section A.

The following are the critical issues a high quality EIA will need to address for the development proposed by BNEL.

1 FLORA AND FAUNA

1. Describe the fauna and flora of and near the project site. This would include, where applicable, forest, river corridors, wetlands, biological corridors, and protected areas.
2. Identify and map the main habitat types and prepare target notes on areas of interest with lists of species of flora and fauna identified in the field and their conservation value, giving particular attention to any species protected under Belize law.
3. If clearing of vegetation is required, estimate the acreage.
4. Identify any species of conservation significance, and specify measures for their protection.
5. Describe mitigation measures including an environmental management plan to be implemented to reduce or offset the adverse impacts. Prepare outline designs for any proposals and give costs for implementing the mitigation measures.

2 WASTE MANAGEMENT

1. Determine the nature and volumes of all types of wastes and other by-products, to be generated by the proposed exploratory drilling activities. Quantify whether these waste are to be considered hazardous or not.
2. Evaluate alternative options for the collection, treatment, recycling (if appropriate), and disposal of these wastes. Identify any chemicals planned for use in the treatment or management of these wastes.
3. Identify the preferred option(s) for waste management/disposal method based on environmental grounds, including necessary infrastructure. Specify any residual impacts of waste management, their significance, and any mitigation measures to be undertaken.
4. Provide an assessment of the potential environmental impacts resulting from the decommissioning of the proposed facilities.

3 NOISE

1. Quantify noise levels to be expected from the exploratory drilling activities and specify any potential impacts of these on the surrounding environment including human habitation.
2. Identify mitigation measures to reduce or limit the potential impact on the surrounding environment and zone of influence (humans and wildlife).

4 AIR

Evaluate the risk of air pollution all aspects and phases of the exploratory drilling operation.

5 HYDROLOGY

Assess the potential effect of exploratory drilling activities will have on any local wells and springs or nearby water bodies.

6 GEOLOGY AND SOILS

1. Assess the risks of soil contamination as a result of the proposed activities.

7 TRANSPORTATION

1. Evaluate potential risks and environmental impacts associated with transportation of equipment to and from the drill site and other associated traffic.
2. Recommend mitigation measures based on the risks and impacts identified in relation to the all types of traffic close to and within the project area. These mitigation measures must include recommendations for protection features against erosion, and other potential pollution to the environment as well as social and human impacts.

8 ENERGY GENERATION

1. Determine the projected energy requirement for the development.
2. Evaluate alternative options for meeting these needs. For these options, it will be necessary to investigate:
 - a. fuel storage (where relevant);
 - b. transportation (where relevant);
 - c. health and safety;
 - d. significance of any pollution that may result from energy generation; and
 - e. mitigatory measures.
3. Select the preferred option for energy generation. Again, this should be based on environmental grounds, and should specify the residual impacts of generation of the preferred option, their significance and the mitigatory measures, which will be undertaken.

9 SOCIAL FACTORS

1. Determine the potential human health and safety impacts of the proposed development.
2. Describe the potential social, economic benefits of establishing the proposed exploratory drilling operation. Characterize the impacts in terms of type (beneficial or adverse), magnitude (high, medium or low), direct/indirect, duration (short, medium and long term, sporadic), avoidability and reversibility.

3. The EIA will consult and report on the views and concerns of directly affected stakeholders such as nearby communities, local NGOs and relevant government departments/agencies regarding the development of the project.
4. Provide mitigation plans where applicable.

10 ARCHAEOLOGY

1. Consult with NICH-Institute of Archaeology to determine any known features of archaeological or cultural importance and provide recommendations for the protection of any features.
2. Provide information in the EIA, acceptable by NICH – Institute of Archaeology standards, that confirm the presence or absence of any feature of archaeological interest within the project area.
3. Provide mitigation plans if applicable

11 MANAGEMENT

Describe disaster management plans including:

1. Human health and safety
2. Fire
3. Explosion
4. Equipment malfunction
5. Road traffic incident involving blend stocks or finished products
6. Spillage
7. Hurricanes

C. CONCLUSIONS / RECOM MENDATIONS

This section proposes alternatives to the execution of the project based on the information generated by Section B.

1 ALTERNATIVES FOR DEVELOPMENT

Present all reasonable alternatives for development in comparative form, exploring each alternative. Include the no-action alternative, and the reason why certain alternatives were recommended or eliminated.

2 MITIGATION AND MONITORING PLAN

1. Based on the investigations, develop a mitigation matrix outlining mitigation measures for all potential negative environmental impacts.
2. Provide a monitoring plan to be implemented for the entire operation.