MINISTRY OF ENERGY AND ENERGY INDUSTRIES
MINERALS DIVISION

MINE DESIGN PLAN TEMPLATE

Please write legibly in black or blue ink. Your responses are not limited to the spaces available. Supplemental pages are to be inserted where required. Please be advised that incomplete / inadequate submissions shall not be accepted and the Applicant will be required to resubmit a properly completed template.

1. GENERAL INFORMATION

<table>
<tr><td colspan="3">Information on Applicant
NAME: TELEPHONE:

ADDRESS: EMAIL ADDRESS:

FACSIMILE:</td></tr>
<tr><td colspan="3">Contact (Person duly authorized by Applicant, leave blank if same as above)
NAME: EMAIL ADDRESS:

PHONE: FACSIMILE:</td></tr>
<tr><td>MINE / QUARRY LOCATION:</td><td>Acreage of Land:
(Acres / Hectares)</td><td>Land Ownership: □Private

□State</td></tr>
<tr><td colspan="2">Certificate of Environmental Clearance Reference Number:</td><td>Water Abstraction Licence Number:</td></tr>
<tr><td colspan="2">Town and Country Planning Approval Number:</td><td>Survey Plan Number:</td></tr>
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Version 2

2. General Site Description:

List the current land use of the site _____ _____	**For all nearby communities, give the following details**			
	Name			
	Characteristics (e.g. agricultural, residential, etc.)			
	Location			
	Population Size			

Vegetation Type

□Primary forest □Secondary forest □Evergreen seasonal forest □Semi-evergreen seasonal forest □Deciduous seasonal forest

□Grasslands □Bush lands □Cultivated lands

Acreage covered by vegetation (Ac/Ha):_____ Acreage to be cleared (Ac/Ha): _____

Acreage to be left undisturbed (Ac/Ha): _____

Topography and Gradient:

□ Generally flat

□ Rolling/Undulating

□ Hilly/Mountainous

Please provide the gradient: _____

DRAINAGE:
Type of drainage present on and near the mining site, tick all that apply:

NATURAL SURFACE DRAINAGE:
□Watercourses □Natural outfalls □Wetlands □ Perennial □ Intermittent

MAN-MADE DRAINAGE:
□Roadside drains □Perimeter drains □Storm-water ponds □Silt traps □Settling ponds □Man-made outfalls (connected to municipal drainage)

Specify type of outfalls present in relation to settling ponds on site:
□Man-made □Outfall to rivers □Closed Loop □Use of silt traps

Give details of measures in place to control sediment discharge after periods of rainfall.

3. Management of Water Sources: *(please liaise with the **Water Resources Agency** for pertinent accurate information)*

Groundwater resources: *present on and near the mining site, tick all that apply*

Aquifer name: _____

Type: □Confined □Unconfined

Acreage of recharge areas: (Hectares/Acres)

Water table: Depth (m)

Give details of measures in place to control contamination of groundwater resources.

Well information for any water-wells within or close to the mining area

Location (northings, eastings) *(Naparima Datum)*	Type (production/monitoring)	Ownership (private/state)

Water utilization

Source	***Rate of abstraction (gallons/month)***	***Monthly usage (gallons/month)***	***Method of treatment of raw water***
Groundwater			
Surface water			
Potable water			

Official Signature and Stamp from the Water Resources Agency

4. Mine Description:

Material to be Mined:	Processing plant on-site
□ Sand □ Fill material □ Sand and gravel □ Hard Rock: □ Blue Limestone □ Yellow Limestone □ Porcellanite □ Andesite □ Oil / Tar Sand □ Other: Please indicate resource of interest _____ □ Open pit □ Hillside	□ Yes □ No Type of Processing Plant: □Wet □Dry □Combination If NO is selected, please identify and provide the name and location of any processing plant to be utilized _____ _____

Deposits to be removed	***Average thickness (ft / m)***	***Volume (cubic yards / cubic metres)***
Topsoil		
Overburden		
Mineral of interest		

Acreage used for topsoil stockpile (Ac/Ha): _____

Acreage used for overburden stockpile (Ac/Ha): _____

Acreage used for aggregate stockpile (Ac/Ha): _____

Acreage used for settling ponds (Ac/Ha): _____

Number of mining pits:

Acreage used for mining pits or strips (Ac/Ha): _____

State the method for the storage of topsoil and overburden:

If applicable, state the method and rate of de-watering of the mine:

State the method of extraction of aggregate:

State the **RATE** of extraction of aggregate (cubic yards/cubic metres per day/month) :

Parameter	***For any BERMS to be constructed***	***For any BENCHES to be constructed***
Maximum height (ft / m)		
Maximum width (ft / m)		
Minimum width (ft / m)		
Maximum gradient / slope (ratio / angle in degrees)		

5. <u>Details of Equipment to be Utilized</u> *(excavators, trucks, etc.)*

Quantity	**Type of Equipment**	**Make and Model**	**Capacity**	**Power consumption**	**Power Source:** (Generator, T&TEC, Diesel, etc.)

<u>(Attach a brochure, where available)</u>

6. Diagrams and Plans:

i. Layout Plan of the Mining Operations- Please produce a detailed scaled drawing showing the location of the following, where applicable:

- Land boundaries
- Mine boundaries
- Vegetative buffers
- Offices and buildings
- Hard ground surface area(s)
- Fuelling site (showing the location of storage tanks and bunds)
- Processing Plant
- Settling ponds
- Silt Traps
- Catchments
- Benches
- Pits
- Check Dams
- Storm-water drains
- Natural and man-made watercourses, and associated berms to be constructed
- Stockpiles for unprocessed minerals
- Stockpiles for processed minerals
- Berms
- Roadways in the vicinity and on the site
- Garage for storage and maintenance of equipment
- Known groundwater recharge area(s)
- Metered and un-metered water abstraction point(s)
- Water-abstraction wells
- Water pumps
- Water discharge points
- Any other feature(s) on the site

Please note that this plan must be approved by the Water Resources Agency

ii. Topography

- Topographic map of the site (to be prepared by a Land Surveyor)
- Profile of mine site prior to mining activity along a North-South transect
- Profile of mine site prior to mining along an East-West transect

iii. Geology

- A Geological Map of the proposed mining site
- Geological cross-sections from the surface to the base of the mineral of interest in the
  - North-South direction and
  - East-West direction
- Isopach Maps of the
  - Topsoil
  - Overburden and
  - Minable minerals

7. If a CEC has not been obtained, please provide:

i. A conceptual **Storm-water Management Plan** for the site stating:

- The temporary and permanent measures that will be implemented during the site preparation, construction and post-construction phases to ensure that there is no net increase in peak runoff for a 1:25 rainfall event from the pre-development to the post-development phase
- The pre-development flow value (Q m3/s) for the proposed site such that the existing volume of surface runoff for the site can be quantified
- The description of any onsite measures that would be instituted to maintain the pre-development flow value during the construction and post-construction phases of the proposed development
- The proposed storm-water management measures can accommodate the post-development flow value and reduce it to the pre-development flow value (Q m3/s)
- Calculations for determining the pre-and post-development flow value (Q m3/s) for the proposed site
- The drainage mechanisms
- The storm-water retention/detention ponds, catchments, landscaping, etc
- The proposed plans for the inspection and maintenance of any physical structures (e.g. detention/retention ponds, catchments, etc.) that may be constructed on the site.

ii. A **Sediment and Erosion Management Plan** for the site stating the:

- Temporary and permanent measures that will be implemented during the site preparation, construction and operational phases of the development
- Possible measures such as, but not limited to, phased clearing, settling pond(s), filtering devices placed within drains and re-vegetation, that will be implemented to minimise or prevent the movement or migration of sediments off site due to the proposed site activities.

iii. A **Monitoring and Reporting Plan for the Quality of Water Discharged** from the site

iv. The **Mitigation Measures** to be applied for dust pollution, noise pollution, emissions from equipment/vehicles, soil pollution, and fuel and oil spills

_____	_____	_____
Date	Authorised Signature	Name (block letters)