# Executive Summary

*For*

## Proposed Jammanhalli Black Granite Quarry

## over an extent of 6.59.5 Ha

### Proposed Production Capacity: 4,150m$^3$

*At*

### Survey No: 83 (Part)

### Village: Jammanahalli

### Taluk: Pappireddypatti

### District: Dharmapuri

### State: Tamil Nadu

*By*

**M/s. Tamil Nadu Minerals Limited**

**(Project termed under Schedule 1(a) Mining of Minerals 'B1' category as per EIA Notification 2006 and its Amendments)**

**ToR Identification No. TO25B0108TN5769635N Dated: 19.05.2025**

**Baseline Period: February 2025 to April 2025**

## EIA Consultant & Laboratory

**M/s. HUBERT ENVIRO CARE SYSTEMS (P) LTD, CHENNAI**

**NABET Certificate No & Validity: NABET/EIA/24-27/RA 0335, valid up to 31.03.2027**

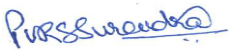
**NABL Certificate No: TC-12310 Dated: 25.09.2023, valid up to 24.09.2025**

**August 2025**

## Revision Status

| | | |
|---|---|---|
| **Name of the Client** | : | **M/s. Tamil Nadu Minerals Limited** |
| **Name of the Project** | : | Proposed Jammanahalli Black Granite Quarry over an extent of 6.59.5 Ha |
| **Name of the Report** | : | Executive Summary |
| **Project No:** H/01/2023/CON/046 | | **Document No:** RP004 |

**Revision details:**

| Rev No. | Date | Details | Prepared by: Name | Prepared by: Sign | Checked by: Name | Checked by: Sign | Approved by: Name | Approved by: Sign |
|---|---|---|---|---|---|---|---|---|
| R2 | 26.08.2025 | 3rd submission- Draft EIA for Public Hearing | P.V.R.S Surendra |  | P.V.R.S Surendra |  | Dr.J.R.Moses |  |
| R1 | 29.07.2025 | 2nd submission- Draft EIA to QC Team | Mr. Vamsee Krishna |  | P.V.R.S Surendra |  | Dr.J.R.Moses |  |
| R0 | 11.07.2025 | 1st Submission | Mr. Vamsee Krishna |  | P.V.R.S Surendra |  | Dr.J.R. Moses |  |

# Executive Summary

## 1. Introduction

The proposed jammanahalli black granite quarry is over an extent of 6.59.5 Ha at S.F.No.83 (P) of Jammanahalli Village, Pappireddipatti Taluk, Dharmapuri District, and Tamil Nadu State. It is a Government poramboke land.

TAMIN has obtained lease for 20 years vide precise area communication letter No.4539479/MME.1/2023-1, Dated: 13.09.2023. Precise area communication letter is enclosed as **Annexure-1**. Accordingly, Mining Plan has been approved by the Commissioner, Department of Geology and Mining, Guindy, Chennai vide letter Rc. No.72/MM4/2023 dated 23.11.2023 for the proposed production capacity of 4,150$m^3$ at 10% recovery of ROM 41,501$m^3$ during the five years of mining plan period. Mining plan approval letter is enclosed as **Annexure-2** and approved mining plan is enclosed as **Annexure-3.**

The ToR application was submitted to TN-SEIAA vide online proposal No. SIA/TN/MIN/525197/2025, dated: 22.02.2025 as the area of the proposed project is more than 5.00.0Ha. The proposal was appraised during the 549$^{th}$ SEAC meeting held on 07.04.2025 and the 822$^{nd}$ SEIAA meeting held on 15.05.2025 and the ToR was issued along with public hearing vide Identification No.TO25B0108TN5769635N, dated: 19.05.2025 under B1 Category, Schedule 1(a) Mining of Minerals as per EIA Notification 2006 and its subsequent amendments. The ToR was enclosed as **Annexure-5**.

Based on the issued ToR, the draft EIA report will be submitted to the Tamil Nadu Pollution Control Board for conducting Public Hearing. After the completion of the Public Hearing, the querries raised and their compliance will be incorporated into the final EIA report, which will then be submitted to the Tamil Nadu SEAC/SEIAA for appraisal and for seeking Environmental Clearance for the proposed project.

**Table-1 Salient Features of the Project Site**

| | |
|---|---|
| Survey No | S.F.No.83 (Part) |
| Village | Jammanahalli |
| Taluk and District | Pappireddipatti Taluk, Dharmapuri District |
| State | Tamil Nadu |
| Toposheets No. | D44S8 |
| Latitude | 12°00'33.8481"N to 12°00'45.4265"N |
| Longitude | 78°25'11.6284"E to 78°25'25.2777"E |
| Extent Area | 6.59.5 Ha |
| Lease Period | 20 years |

| | |
|---|---|
| Estimated Geological Reserves (ROM)$m^3$ | 4,09,500 |
| Estimated Mineable Reserves (ROM) $m^3$ | 2,13,213 |
| Proposed Production RoM $m^3$ | 41,051 |
| Black Granite production @10% recovery $m^3$ | 41,501 |
| Annual peak production in $m^3$ | 4,150 |
| Depth of Mining | 12m from top of the hill (Height of the hillock is 32m) |
| Method of Mining | Open cast semi mechanized method |
| Nearest NH/SH Roads | ➢ SH-6A (Tiruvannamalai-Harur),~7.69 km, ENE<br>➢ NH-179A (Salem-Vaniyambadi),~ 2.89 km, ESE |
| Nearest Town | Harur,~7km, NE |
| Nearest Railway Station | Thonganur,~10.17km, NW |
| Nearest Airport | Salem Airport,~45.20km, WSW |
| Project Cost | 99.97 lakhs |
| Water Requirement | 3.5KLD |
| Power Requirement | 60kVA |
| Fuel Requirement | 200 liters/day |
| Depth of Water Table | 11.6m as per TWAD (TWAD- Dharmapuri - May 2024) |

## 2. PROJECT DESCRIPTION

### 2.1 Method of Quarrying

The quarrying operation is being carried out by open cast semi-mechanized method with deployment of HEMM for development and production activities under Regulation106. The quarrying work being carried out under the direct supervision of our statutory mining personal of TAMIN as approved by the Directorate General of Mines Safety (DGMS) under MMR, 1961.

**Reserves of Black Granite**

The Geological reserve of black granite was computed based on the geological plan & section as 4,09,500 $m^3$. Mineable Reserves have been computed as 2,13,213$m^3$ after leaving the reserves locked up in safety barrier and benches based on the Conceptual Plan and sections, the effective(Saleable) Mineable Reserves have been worked out as 21,321$m^3$ by applying the recovery factor 10%.

The total proposed production capacity is 4,150$m^3$ at 10% recovery of ROM 41,501$m^3$. The annual peak production per year would be 1,000$m^3$ at 10% recovery of ROM 9,999 $m^3$.

**Table-2 Ultimate Pit Dimensional Details**

| S. No | Description | Ultimate Pit Dimensions (m) | | |
|---|---|---|---|---|
| | | Length | Width | Depth |
| 1 | Top | 324.0 | 68.0 | 33.0 |
| 2 | Bottom | 193.0 | 22.50 | |

**Table-3 Available Reserves**

| S. No | Geological Reserves ($m^3$) | Mineable Reserves ($m^3$) | Mineable Saleable Reserves at 10% recovery ($m^3$) |
|---|---|---|---|
| 1. | 4,09,500 | 2,13,213 | 21,321 |

**Table-4 Proposed Year Wise Production**

| S. No | Year | ROM ($m^3$) | Recovery @ 10% ($m^3$) | Granite Waste @ 90 % ($m^3$) |
|---|---|---|---|---|
| 1 | 1st Year | 6,003 | 600 | 5,403 |
| 2 | 2nd Year | 7,503 | 750 | 6,753 |
| 3 | 3rd Year | 8,500 | 850 | 7,650 |
| 4 | 4th Year | 9,496 | 950 | 8,546 |
| 5 | 5th Year | 9,999 | 1000 | 8,999 |
| **Total** | | **41,501** | **4,150** | **37,351** |

**Waste Management**

The waste generated during the mining operation i.e., over burden, side burden, granite rejects and the non-recoverable/un sized boulders and rubbles etc is around 64,962 $m^3$, will be dumped in the suitable area of around 0.66.0 Ha which is already selected. The area of disposal waste rock has been identified in South East portion of the lease area. The unsold blocks are kept within the boundary on the country rock area. The dump will be maintained not exceeding 5m height and the slope angle will be at 45° from horizontal. The area and location of the waste dump has been provided in Plate no. 8 of Sectional Plates and the same is enclosed as **Annexure-4.**

**Table-5 Proposed Waste Generation**

| S. No | Year | Over Burden ($m^3$) | Side Burden ($m^3$) | Granite Rejects @ 90% ($m^3$) |
|---|---|---|---|---|
| 1 | 1st Year | 6,320 | 580 | 5,403 |
| 2 | 2nd Year | 4,452 | 174 | 6,753 |
| 3 | 3rd Year | 4,539 | 401 | 7,650 |
| 4 | 4th Year | 7,012 | 2,339 | 8,546 |
| 5 | 5th Year | 1,314 | 480 | 8,999 |
| | **Total** | **23,637** | **3,974** | **37,351** |

### 2.2 Greenbelt Details

The total area for the proposed green belt is 0.06.5 Ha during first 5 years of the proposed quarrying activity. TAMIN is proposing to plant 825 trees which are proposed to plant within the 7.5m safety buffer zone mine lease area and in the proposed green belt area.

**Table-6 Proposed Greenbelt Development Details**

| Year | No of trees proposed to plant | Name of the species to be plant | Survival rate expected | No of trees expected to grow |
|---|---|---|---|---|
| 2025-2026 | 825 | Neem, Vilvam, Aathi, Panai | 80% | 660 |

### 2.3 Man Power Requirement

Manpower details are given in below table.

**Table-7 Manpower Details**

| S.No | Description | No of persons |
|---|---|---|
| **A** | **Technical/Mining Personnel** | |
| 1 | Geologist/Agent (M.sc Qualified) | 1 |
| 2 | Mine Manager ( Holder of Manager Certificate of Competency under MMR, 1961) | 1 |
| 3 | Mining Mate cum Blaster | 1 |
| 4 | Machinery operator | 6 |
| 5 | Diesel Mechanic | 1 |
| **B** | **Workers** | |
| 1 | Skilled | 1 |
| 2 | Semi- Skilled | 9 |
| 3 | Un-skilled | 10 |
| | **Total** | **30** |

### 2.4 List of Equipment

The list of Equipment is given in below table.

**Table-8 List of Machineries**

| S. No | Machinery | Capacity | Numbers |
|---|---|---|---|
| 1 | Excavator | 300 LC | 1 |
| 2 | Compressor | 400 cfm | 2 |
| 3 | Dumpers | 25 Tonnes | 2 |
| 4 | Diamond wire saw | 30 $m^3$/day | 1 |

| | | | |
|---|---|---|---|
| 5 | Jack Hammers (32mm dia.) | 1.2 to 6m | 6 |
| 6 | Diesel Generator | 125 kVA | 1 |
| 7 | Tractor Mounted Air Compressor | - | 1 |

### 2.5 Land use Pattern of the quarry area

**Table-9 Land Use Pattern of the Study Area**

| S.No | Description | Present area ( Ha) | Proposed Mining Plan Period (Ha) | Area at the end of the life of mine (Ha) |
|---|---|---|---|---|
| 1. | Mining Area | -- | 0.78.0 | 2.20.5 |
| 2. | Waste Dump | -- | 0.66.0 | 1.74.0 |
| 3. | Office Infrastructure | 0.01.0 | -- | 0.01.0 |
| 4. | Foot Path | 0.14.0 | -- | 0.14.0 |
| 5. | Afforestation | -- | 0.06.5 | 0.27.5 |
| 6. | Unutilized Area | 6.44.5 | 4.94.0 | 2.22.5 |
| **Total** | | **6.59.5** | **6.44.5** | **6.59.5** |

## 3. IMPACTS AND MITIGATION MEASURES

**Impacts due to Mining Activity**

Various environmental impacts, which have been identified due to the mining operations, are discussed in the following sections. The environmental parameters most commonly affected by mining activities are:

### 3.1 Land Environment

**Impacts**

Potential impacts envisaged due to mining operations on land environment are

- The topsoil and bushes observed in the hill slides over the dyke will be removed completely. Hence the top hill ridge will be excavated which will interrupt the aesthetic view of the locality.
- The proposed quarrying operation will alters the hill lock slope and natural drainage pattern.
- Due to the proposed mining activity a pit will be created over the hill lock and left open with the approximate dimension as follows.

**Table -10 Ultimate Pit Details**

| S. No | Description | Ultimate Pit Dimensions (m) | | |
|---|---|---|---|---|
| | | Length | Average Width | Depth |
| 1 | Top | 324.0 | 68.0 | 33.00 |
| 2 | Bottom | 193.0 | 22.50 | |

- The Total waste (Granite waste+ Over Burden + Side Burden) to be generated during the five years of mining plan period will be around 64,962$m^3$. These wastes are proposed to be dumped on the Southeast side of lease area.
- Usage of chemicals like Rock Breaking Powder ($Ca(OH)_2$) for secondary blasting, fuel and lubricants used for machineries will affect the soil quality and fertility.
- Generation of hazardous and non-hazardous wastages.
- Creation of infrastructure facilities like office building, rest shelter, first-aid centre, toilets and other service facilities.

**Mitigation Measures**

- Good housekeeping and best practices of waste handling shall be adopted to eliminate/minimize the risks of soil contamination.
- The wastes generated will be stored in temporary storage facility and disposed through nearby municipal disposal bins. Waste oil generated from quarry machineries will be disposed through TNPCB authorized dealers.
- Dust suppression using water tankers.
- Greenbelt around infrastructure within the mine lease area and along the periphery of the mine lease area by using native plants.
- Proper fencing will be provided around the mine lease area.

### 3.2 Air Environment

**Source**

The major sources of air pollution due to mining operations are DG sets, Machineries and Vehicular transportation. The activities causing air pollution due to the mining operations will be excavation, drilling, blasting and transportation. The sources of air emission are given below in **Table-11**.

**Table-11 Sources of air pollution due mining operations**

| S. No | Source of emission | Pollutant |
|---|---|---|
| 1. | Excavation of Granite | PM |

| | | |
|---|---|---|
| 2. | Operation of diesel driven equipment | Gaseous emission |
| 3. | Transportation of product | PM, $NO_x$, CO |

**Impacts**

- Due to mining activity, Air pollution will cause respiratory problems.
- Air pollution will affect nearby ecosystems, vegetation, livestock habitats and water sources.

**Mitigation measures**

The mitigation measures due to the proposed mining activity for air environment is given below.

**Table-12 Dust Control Measures**

| S. No | Activities | Control Measures |
|---|---|---|
| 1 | Drilling | ➢ Adopting wet drilling method<br>➢ Drilling machine should be provided with dust extractors |
| 2 | Blasting | ➢ Use of control blasting technique<br>➢ Water spray before blasting<br>➢ Usage of Rock breaking powder($Ca(OH)_2$)<br>➢ Usage of Wire saw cutting method |
| 3 | Loading | ➢ Water spray on granite material before loading |
| 4 | Transportation of material | ➢ Covering of the trucks/dumpers to avoid spillage<br>➢ Water spray on the haul roads before and after transportation<br>➢ Maintenance of haul road<br>➢ Speed of vehicles will be limited upto 25km/hr<br>➢ Development of a green belt of suitable width on both sides of haul road |

### 3.2.1 Air Quality Modelling

Total maximum GLCs from emissions as given below **Table-13.**

**Table-13 Total maximum GLC**

| Pollutant | Max. Base Line Conc. (µg/m³) | Estimated Incremental Conc. (µg/m³) | Total Conc. (µg/m³) | NAAQ standard |
|---|---|---|---|---|
| $PM_{10}$ | 57.72 | 2.05 | 59.77 | 100 |
| $SO_2$ | 15.01 | 0.12 | 15.13 | 80 |
| $NO_X$ | 25.87 | 0.96 | 26.83 | 80 |

The maximum ground level concentration observed due to mining activities and traffic movement through Air Modelling for PM, $SO_2$ and $NO_x$ are 57.72µg/m$^3$, 15.01µg/m$^3$ and 25.87µg/m$^3$ respectively.

### 3.3 Transportation of material

**Impacts**

The granite will be transported through existing road by tippers and approximately 2 times per week materials will be transported. The traffic load was observed on NH-179A Connecting Salem – Vaniyambadi, The vehicular movement for the proposed project is given in **Table-14.**

**Table-14 Traffic Volume after Implementation of the Project**

| For the Road | Volume of Traffic | Volume (V) | Road Capacity (C) | V/C Ratio | LOS Category* | Traffic Classification |
|---|---|---|---|---|---|---|
| Existing | 9014 | 11970 | 35000 | 0.34 | "A" | Free Flow Traffic |
| After implementation | 9018 | 11985 | 35000 | 0.34 | "A" | Free Flow Traffic |

*LOS (Level of Service) categories are A-Free Flow, B- Reasonably Free Flow, C-Stable Flow, D-Approaching unstable flow, E- Unstable flow, F- Forced or breakdown flow

Due to propose project there will be slight increment in the vehicle movement but the level of service (LOS) anticipated will be Free Flow Traffic.

**Mitigation Measures**

- Covering of the trucks/dumpers to avoid spillage
- Water spray on the haul roads before and after transportation
- Maintenance of haul road
- Speed control on vehicles
- Development of a green belt of suitable width on both sides of haul roads.

### 3.4 Water Environment

**Impacts**

Impacts envisaged due to wastewater generation during mining operations are

- Wastewater generated from the mines can pollute surface water and groundwater, which can harm wildlife and human health.
- Runoff from mining wastewater can devastate surrounding vegetation.

- Explosive blasting in a mine can cause groundwater to seep to lower depths or connect aquifers, exposing them to contamination by toxic heavy metals.

**Mitigation Measures**

**Surface Water Pollution Control Measures**

- Construction of garland drains of suitable size around mine area and dumps to prevent rain water descent into active mine areas.
- Construction of baffle wall or trenches nearby water bodies to prevent runoff water from mines.
- The dumping will be provided with slopes and covered with grasses, shrubs, etc to prevent erosion.

**Ground Water Pollution Control Measures**

- The domestic sewage of 1.2 KLD will be disposed through septic tank followed by soak pit.
- Regular monitoring of water levels and quality in the existing open wells and bore well in the vicinity will be carried out.

### 3.5 Rain Water Harvesting

**Impacts**

Impacts envisaged due to rainwater on mining operations are

- Heavy rainfall can cause high water levels at a mining site, which can damage equipment and threaten worker safety.
- Rainwater can carry pollutants from a mining site into nearby water bodies; these pollutants can include heavy metals, acids, and other substances that can contaminate the water.
- When it rains, the loosened topsoil can be washed away, carrying sediments that pollute water bodies.

**Mitigation Measures**

- Construct barriers at suitable intervals along the path of the drains to restrict the flow of water.
- Construction of baffle wall or trenches nearby water bodies to prevent runoff water from mines.
- Provide necessary overflow arrangement to maintain the natural drainage system.
- The rainwater will be diverted by garland drains to the sump area within the mine lease. The stored water will be used for agriculture activities and also for dust suppression purpose.

### 3.6 Noise Environment

**Impact**

The main sources of noise generation during mining operations are

- Drilling
- Blasting
- Loading & unloading of materials
- Transportation

**Mitigate Measures**

Following mitigation measures should be taken to control noise pollution

- Workers will be provided with earmuffs, ear plugs etc.
- All vehicles and machinery will be properly lubricated and maintained regularly.
- Speed of the vehicles entering and leaving the quarrying lease will be limited to 25 kmph.
- Unnecessary use of horns by the drivers of the vehicles shall be avoided.
- Controlled blasting with proper spacing, burden and stemming will be maintained.
- Usage of NONEL Blasting (Non-Electric Detonator).
- The blasting will be carried out during favourable atmospheric condition.

### 3.7 Vibration due to mining operations

**Impacts**

Due to mining activities, the following impacts of vibration are envisaged as follows:

- Structural damage to infrastructure facilities within the mine lease area.
- Ground Subsidence
- Vibrations cause human health impacts such as fatigue, muscle strain, joint pain, sleep disturbances, cardiovascular problems etc.

**Mitigation Measures**

- No primary blasting will be used for granite quarry operations. Only secondary controlled blasting techniques will be used.
- Usage of NONEL Blasting.
- Proposed peripheral green belt will be developed in 7.5m safety zone around the quarry.
- All vehicles and machinery will be properly lubricated and maintained regularly.
- Periodical health checkup will be done for the workers.

### 3.8 Biological Environment

**Impacts**

Impacts on biodiversity are given below.

**Table-15 Impacts on Biodiversity**

| S. No | Activity | Examples of aspects | Examples of biodiversity impact |
|---|---|---|---|
| 1 | Excavation | Land clearing | Loss of habitat, introduction of plant diseases, Siltation of water courses |
| 2 | Blasting, Digging and hauling | Dust, noise ,vibration, water pollution | Disruption of water courses ,impacts on aquatic ecosystems due to changes in hydrology and water quality |
| 3 | Waste dumping | Clearing, water and soil pollution | Loss of habitat, soil and water contamination, sedimentation. |
| 4 | Air emissions | Air pollution | Loss of habitat or species |
| 5 | Waste disposal | Oil and water pollution | Encouragement of pests, disease transfer, contamination of groundwater and soil |
| 6 | Access roads | Land clearing | Habitat loss or fragmentation, water logging upslope and drainage shadows down slope |
| 7 | Water supply (potable or industrial) | Water abstraction or mine dewatering | Loss or changes in habitat or species composition |

**Mitigation Measures**

- To reduce the adverse effects on flora/fauna due to deposition of dust generation from mining operations, water sprinkling and water spraying systems will be ensured in all dust prone areas to arrest dust generation.
- Development of greenbelt around the mine lease area.

### 3.9 Occupational Health due to mining operations

**Impacts**

The following occupational health issues are observed due to mining operations.

- Exposure to chemicals
- Airborne hazards
- Dust
- Noise and vibration
- High temperatures and humidity
- Manual handling

**Mitigation Measures**

The mitigation measures of occupational health and safety is given below.

**Table-16 Mitigation for occupational health and safety**

| S. No | Activity | Mitigation measures |
|---|---|---|
| 1 | Excavation | ➢ Planned excavation, avoid haphazard mining. |
| 2 | Drilling and blasting | ➢ Adopting wet drilling method.<br>➢ Using controlled blasting techniques.<br>➢ Usage of diamond wire saw cutting. |
| 3 | Safety zone | ➢ Provisions of green belt in the 7.5m safety zone area around the mine lease.<br>➢ Restricted entry, use of sirens and cordoning of the lasting area are some of the good practices to avoid accidents. |
| 4 | Overburden stabilization | ➢ Accidents are known to happen due to overburden collapse.<br>➢ Therefore, slope stabilization and dump stability are critical issues for safety and environment. Proper measures will be taken care. |
| 5 | Worker's health surveillance | ➢ Providing personal protective equipments such as masks, helmets, gloves, earplugs etc., for workers.<br>➢ Health survey program for workers and local community<br>➢ Regular training and awareness of employees to be conducted to meet health and safety objectives. |

## 4. PROJECT COST & ESTIMATED TIME OF COMPLETION

### 4.1 Project Cost

The estimated project cost is given below **Table-17.**

**Table-17 Project cost**

| S. No | Description of the Cost | Amount in Rs. |
|---|---|---|
| **A. Fixed Cost** | | |
| 1 | Land Cost | Nil. Because Govt. land |
| 2 | Labour shed | 50,000/- |
| 3 | Sanitary facilities | 50,000/- |
| 4 | Fencing Cost | 1,25,000/- |
| | **Total** | **2,25,000/-** |
| **B. Operational Cost** | | |
| 1 | Jack Hammers | 1,98,000/- |
| 2 | Compressor | 19,82,000/- |
| 3 | Diamond wire saw | 4,87,000/- |

| | | |
|---|---|---|
| 4 | Diesel General | 4,00,000/- |
| 5 | Excavators | 6,00,000/- |
| 6 | Tippers | 58,00,000/- |
| 7 | Drinking water facilities for the labours | 50,000/- |
| 8 | Safety kits | 50,000/- |
| | **Total Operational Cost** | **95,67,000/-** |
| **C. EMP Cost** | | |
| 1 | Afforestation | 30,000/- |
| 2 | Water Sprinkling | 50,000/- |
| 3 | Water Quality test | 25,000/- |
| 4 | Air Quality test | 25,000/- |
| 5 | Noise/Vibration test | 25,000/- |
| 6 | CSR activities | 50,000/- |
| | **Total EMP Cost** | **2,05,000/-** |
| | **Total Cost of the Project (A+B+C)** | **99,97,000/- (Say 1 Crore)** |

### 4.2 Proposed schedule for approval and implementation

The time schedule for the completion of the proposed mining project is given in the below as,

**Table-18 Project schedule**

| Particulars | Time Schedule |
|---|---|
| Submission of Draft EIA/EMP to TNPCB for Public Hearing | August-2025 |
| Conduction of Public Hearing | October-2025 |
| Submitting final EIA/EMP | December-2025 |
| Presentation to SEAC and Obtaining EC | January-2026 |

The project will be implemented after obtaining EC from SEIAA and CTO from PCB.

### 4.3 CER Activity

Based on O.M F.No. 22-65/2017-IA.III dated: 01.05.2018, 2.0% of the Project cost need to be spent for CER activities i.e., Rs. 2.0 Lakhs. However, TAMIN is proposing for Rs. 4.0 Lakhs which is 4.0% of Project cost under CER activities for the Jammanahalli Government Higher Secondary School.

## 5. MINING CLOSURE PLAN

### 5.1 Progressive Mine Closure Plan

As a petro genetic character the depth persistence of the black granite body in the mine lease area is beyond the workable limits. Based on the statutory provisions of mine safety rules and regulations the workable depth is proposed for 33m from top of the hill. However, in course of time there is a possibility of up gradation of technology for safe mining beyond 33m. Hence, it is proposed not to backfill the ultimate pit. The pit boundaries shall be safely fenced with 7.5m buffer safety zone and rain water or seepage water stored in the pit will be used for agriculture purpose. Green belt development will be maintained in the 7.5m buffer safety zone. Garland drain will be constructed around the quarry area to prevent the flow of silt and sediment runoff. At the end of the life of mine, the mine closure plan will be prepared and submitted to the competent authority to obtain approval and the same will be implemented.

## 6. REHABILITATION AND RESETTLEMENT

There will be no Rehabilitation and Resettlement in this proposed project.

## 7. SITE ANALYSIS

Environmental sensitive such as water bodies, reserved forest, wildlife sanctuary, national park, human settlements and other ecological features are given below.

### 7.1 Environmentally/Ecologically Sensitive areas

The environmental sensitive areas covering an aerial distance of 15km from the project boundary is given in below tables.

**Table-19 Lists of Water bodies**

| S.No | Water bodies | Distance (~km) | Direction |
|---|---|---|---|
| 1. | Turinjihalli Ar | 0.57 | NW |
| 2. | Annamalaihalli Pond | 1.26 | NE |
| 3. | Paraiyapatti Pudur Lake | 1.68 | SSE |
| 4. | Lake near Krishnapuram | 2.30 | NNW |
| 5. | Tenkaraikottai Lake | 2.53 | W |
| 6. | Vaniyar River | 2.74 | SE |
| 7. | Piniyar River | 3.85 | ESE |
| 8. | Nambiyappatii Lake | 3.97 | ENE |
| 9. | Karukkampatti River | 4.04 | ESE |
| 10. | Panchalanagar Lake | 4.53 | WSW |

| | | | |
|---|---|---|---|
| 11. | Alapuram Eri | 5.73 | SW |
| 12. | Todddampatti Lake | 5.74 | ENE |
| 13. | Varatta Ar | 8.61 | NE |
| 14. | Sintalbadi Lake | 10.04 | NW |
| 15. | Vallimadurai Reservoir | 12.92 | ESE |

**Table-20 Lists of nearby Habitations**

| S.No | Name of the Village | Distance(~km) | Direction | Approximate population |
|---|---|---|---|---|
| 1. | Annamalaihalli | 0.66 | NE | 1,227 |
| 2. | Jammanahalli | 0.95 | SSW | 2,363 |
| 3. | Vadakarai | 1.08 | NW | 300 |
| 4. | Tennagaram | 1.25 | WSW | 100 |
| 5. | Gopinathampatti | 1.60 | ESE | 2,500 |

* Few settlements are located near to the quarry.

**Table-21 List of Reserved Forests**

| S.No | Reserved Forest | Distance(~km) | Direction |
|---|---|---|---|
| 1 | Kavaramalai RF | 3.18 | W |
| 2 | Harur RF | 5.14 | NNE |
| 3 | Pallippatti RF | 6.21 | SE |
| 4 | Thombakal Ext RF | 6.64 | ESE |
| 5 | Morappur RF | 9.17 | NNE |
| 6 | Thombakal RF | 9.53 | SE |
| 7 | Kavaramalai Ext RF | 11.55 | W |
| 8 | Nochikuttai Ext RF | 12.62 | SSE |
| 9 | Kuttar RF | 12.78 | SSW |
| 10 | Veppampatti RF | 13.04 | E |
| 11 | Veppampatti Ext RF | 13.42 | E |
| 12 | Bothakkadu RF | 13.61 | SW |
| 13 | Poyyappatti RF | 13.95 | ENE |
| 14 | Nochikuttai RF | 14.15 | SSE |
| 15 | Karungal RF | 14.59 | ESE |
| 16 | Mavuttu RF | 14.68 | SSW |

## 8. BASELINE STUDY

### 8.1 Study Period

The baseline environmental monitoring were carried out during **(February 2025 to April 2025)** within the study area.

### 8.2 Ambient Air Quality

The ambient air quality has been monitored at 8 locations for 15 parameters as per NAAQS, 2009 within the study area.

**Table-22 Summary of Ambient Air Quality Monitoring**

| S.No | Parameters | Minimum of Average ($\mu g/m^3$) | Maximum of Average ($\mu g/m^3$) | NAAQ Standards ($\mu g/m^3$) |
|---|---|---|---|---|
| 1 | $PM_{10}$ | 36.95 | 48.57 | 100 |
| 2 | $PM_{2.5}$ | 18.48 | 24.29 | 60 |
| 3 | $SO_2$ | 7.13 | 12.63 | 80 |
| 4 | $NO_2$ | 14.26 | 21.77 | 80 |

### 8.3 Noise Environment

Ambient noise levels were monitored using precision noise level meter in and around the project site at 8 locations during study period.

- In Residential area day time noise levels varied from 50.1 dB (A) to 53.9dB (A) and night time noise levels varied from 40.5 dB(A) to 43.7 dB(A) across the sampling stations. The field observations during the study period indicate that the ambient noise levels in Residential area are within the limit prescribed by CPCB for Residential area (55 dB (A) Day time & 45 dB(A) Night time).

- In Industrial Area day time noise levels was recorded as 60.3 dB(A) and the night time noise levels was recorded as 51.9 dB(A) among the sampling stations. The field observations during the study period indicate that the ambient noise levels are within the prescribed limit by CPCB (75 dB(A) Day time & 70 dB(A) Night time)

### 8.4 Water Quality

The prevailing status of water quality at 8 locations for surface water and 8 locations for ground water have been assessed during the study period.

#### 8.4.1 Surface water quality

**Table-23 Summary of Surface Water Quality Monitoring**

| S.No | Parameters | Minimum | Maximum | Designated Best Use Water Quality Criteria |
|---|---|---|---|---|
| 1. | pH | 7.12 | 7.94 | A |

| | | | | |
|---|---|---|---|---|
| 2. | TDS (mg/l) | 673 | 1149 | - |
| 3. | COD (mg/l) | 48 | 92 | - |
| 4. | BOD (mg/l) | 4 | 8 | - |
| 5. | Total Hardness(mg/l) | 300 | 590 | - |

### 8.4.2 Ground Water Quality

**Table-24 Summary of Ground Water Quality Monitoring**

| S. No | Parameters | Minimum | Maximum | IS 10500: 2012 Standards | |
|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit |
| 1. | pH | 7.11 | 7.74 | 6.5 – 8.5 | NR |
| 2. | Chloride (mg/l) | 529.52 | 900.7 | 250 | 1000 |
| 3. | Total Hardness (mg/l) | 460 | 790 | 200 | 600 |
| 4. | TDS (mg/l) | 1160 | 1775 | 500 | 2000 |

- It is observed that all the collected ground water samples meets the drinking water standards (IS 10500:2012) and can be used for drinking

### 8.5 Soil Quality

Soil sampling was carried out at eight locations in the study area. The summary of the soil quality is given below.

**Table-25 Summary of Soil Quality**

| S.No | Parameters | Minimum | Maximum |
|---|---|---|---|
| 1. | pH | 6.83 | 7.86 |
| 2. | Electrical conductivity (µS/cm) | 68.0 | 188.0 |
| 3. | Nitrogen (%) | 0.0010 | 0.0059 |
| 4. | Phosphorus (µg/kg) | BLQ (LOQ 5.0) | |
| 5. | Potassium (mEq/100g) | 11.85 | 23.58 |

## 9. WASTE HANDLING

### 9.1 Solid Waste Management

The municipal solid waste generation and management details are given in **Table-26**.

**Table-26 Municipal Solid Waste generation & Management**

| S. No | Type | Quantity Kg/day | Disposal method |
|---|---|---|---|
| 1 | Organic | 8.1 | Municipal bin |

| | | | |
|---|---|---|---|
| 2 | Inorganic | 5.4 | TNPCB authorized recyclers |
| **Total** | | **13.5** | |

As per CPHEEO guidelines: MSW per capita/day =0.45

### 9.2 Hazardous Waste Management

The type of hazardous waste and its mode of disposal are detailed in **Table-27**.

**Table-27 Hazardous Waste Management**

| Waste Category No | Description | Quantity (L/Year) | Mode of Disposal |
|---|---|---|---|
| 5.1 | Waste Oil | 3.0 | Will be collected in leak proof containers and disposed to TNPCB authorized recyclers |

## 10. POST PROJECT MONITORING

**Post Project Environmental Monitoring**

The Project proponent set up regular monitoring stations to assess the quality of the environment.

**Table-28 Post Project Environmental Monitoring Program**

| S. No | Area of Monitoring | Number of Sampling Stations | Frequency of Sampling | Parameters to be Analyzed |
|---|---|---|---|---|
| 1 | Meteorology | One | Hourly and Daily basis | Wind speed and direction, Temperature, Relative Humidity, Atmospheric pressure, Rainfall. |
| 2 | Ambient Air Quality | 2 Stations (one in up wind and one in downwind) | Twice a week:24 hourly period | $PM_{10}$, $PM_{2.5}$, $SO_2$, and $NO_2$ |
| 3 | Noise | 2 (one within core area and one in buffer area) | Once every season | Ambient Equivalent continuous Sound Pressure Levels (Leq) at day and Night time. |
| 4 | Exhaust from DG set | Stack of DG set | Quarterly | $PM_{10}$, $PM_{2.5}$, $SO_2$, and $NO_2$ |
| 5 | Soil | Two Locations within the Project Site | Yearly Once | Physico chemical properties, Nutrients, Heavy metals |
| 6 | Terrestrial Ecology | Within 10km around the project | Once in three years | Symptoms of injuries on plants |
| 7 | Surface/ Ground water quality | Two Locations within the study area | Yearly Once | As per ISO 10500 Standard parameters and IS 2296:1992 Standards |

## 11. CONCLUSION

The **proposed Jammanahalli Black Granite Quarry**, extending over 6.59.5 hectares, is anticipated to play a vital role in fostering socio-economic development in the surrounding villages. The project is expected to provide direct employment opportunities for nearly 30 individuals, thereby improving local livelihood options and contributing to an enhanced standard of living for the community.

From an environmental standpoint, possible impacts such as dust emissions, noise generation, and siltation due to surface run-off have been carefully evaluated. The project will adopt comprehensive mitigation measures to ensure that all activities remain within prescribed regulatory standards, thereby minimizing potential adverse effects on the environment.

To ensure pollution control and workplace safety, the following environmental management practices will be implemented on a routine basis:

- Water sprinkling on haul roads and drilling sites to minimize dust emissions.
- Greenbelt development and plantation around the quarry lease boundary to serve as dust barriers and to augment local biodiversity.
- Adoption of diamond wire saw cutting techniques, which significantly reduce noise, vibration, and fugitive dust compared to conventional blasting practices.
- Mandatory provision and use of personal protective equipment (PPE) to safeguard workers' health and safety.

Furthermore, under its Corporate Environmental Responsibility (CER) commitments, the project proponent will extend support toward strengthening local infrastructure, education, healthcare, and sanitation facilities. These initiatives are expected to generate substantial social and economic benefits for the nearby communities, reinforcing the project's positive contribution to regional development.