

EXECUTIVE SUMMARY

For

Over an Extent of 29.00 Ha. of Colour Granite in

**Sy. No. 207 of Nandagiri (V), Pegadapally (M) Jagityal (D),
Telangana State.**

Proposed By

M/s. Alliance Minerals Private Limited.,

Flat No: 505, ACE Pristine Elegance, Saroomagar, Hyderabad -35.

Prepared by



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Executive Summary of Colour Granite of 29 Ha. M/s. Alliance Minerals Pvt. Limited.,

INTRODUCTION:

M/s. Alliance Minerals Private Limited has a mining lease for Colour Granite over an extent of 29.0 Hectares and was in operation from 2009 in Sy. No. 207 of Nandagiri (V), Pegadapally (M) Jagityal (D), Telangana State.

SALIENT FEATURES OF THE STUDY AREA

Details of the Study Area	
District & State	Jagityal, Telangana State
Mandal	Pegadapally
Village	Nandagiri
Nature of the Area	Govt. Revenue Land
Latitude	18°39'31"-18°40'04"
Longitude	79°02'50" -79°03'03"
General Climatic Conditions	
Maximum Temperature	44°C
Minimum Temperature	18°C
Annual Rain Fall	750 mm
Wind pattern during study period	NE to SW
Accessibility	
Nearest Village	Nandagiri 1.1km
Road Connectivity	A metal road of 1.1km length is connecting to the area from Nandagiri Village
Rail connectivity	The nearest railway station (Gangadhar) located at a distance of 10 km from the applied area
Airport	Samshabad
Importance places	
Archaeologically Important Site	None within the Study area
Historically Important Site	None within the Study area
Sensitive places	None within the Study area
Sanctuaries/National Parks	None within the Study area
Nearest water body	Kakatiya canal - 0.7km-North
Forest Area	Reserved Forest - 8.0km-W

PROPOSED RATE OF PRODUCTION

Proposed Rate of Colour Granite: 9,600 Cum/Year

GEOLOGICAL RESERVES

Recoverable Geological Reserves: 6,83,275 m³

Life of Mine is = $683275 \text{ m}^3 / 9600 \text{ m}^3 = 71.17$ years

MINING**Mining Methodology:**

The method of mining is Open cast semi mechanized method by using drilling & blasting by low explosives and wire saw cutting and developing multiple benches with 6m height each.

Sheet rock zone: if sheet rock is encountered,

Splitting of primary block from mother rock: The mining will be followed in the form of key cut. This involves

Loosening of the primary block from the mother rock: As the primary block is 4m X 3m X 2m low benches method is used, where in vertical and horizontal cutting is done by diamond wire sawing. Splitting will be done by using low chemical explosive like ECM/CaOH. Vertical cutting also will be done with diamond wire sawing in the face attached to the mother rock.

Horizontal cutting: If horizontal joints are available they will be made use of. if not, horizontal cutting will be done by diamond wire sawing.

Secondary Cuts: This involves shaping and squaring of primary block. When the bench height is less than 6m, low bench method is adopted where in vertical cutting is done by drilling and Splitting will be done by using low chemical explosives like ECM/CaOH.

Secondary splitting and segment tipping: This are done by drilling closed space holes (along a line) down to depth and the secondary block will be removed by easily by just pulling it with the help of excavator.

Transportation to dressing yard: Transportation will be done by using cranes and tippers depending upon size of the block. Blocks will be removed from working site to dressing yard.

Block dressing: The commercial blocks will be dressed at the corners with minimum wastage. If sheet rock is encountered

Separation of large primary blocks from the mother rock by pre-splitting (primary cut):

The rock is exposed as a sheet. Diamond wire saw will be used to cut primary block from the mother/ insitu rock. The size of the primary block is 4m X3m X2m (l x W x B) i.e. 24 m³.

Subdivision of large(primary)block into secondary blocks (Secondary cuts):

Secondary blocks of 3.3m X2.0m X 2.0m will be cut. Secondary cutting will be done using compressors (6-7 bars,1X900), down the hole jack hammer. The other machinery required is tippers for transport

Production of commercial blocks by production cuts:

Commercial blocks will be produced by selecting the blocks free from any mineralogical or structural defects. They will be marked and they require only segment tipping. Finally blocks of 3.3m X2.0m X 2.0m ((l x W x B) or 2.5m X 1.5m X1.5m and 1.8m x 1.2m x 1.0m sizes will be cut depending on the requirement. If it for monuments 1m X 0.5m X0.5m will also be cut.

HANDLING OF WASTE AND SUBGRADE MATERIAL:**Solid wastes:**

Removal of weathered rock and the rock waste is the only solid waste that will be generated from this mine. It will be removed and will be dumped along the northern portion of the lease area where already a dump exists, which will be simultaneously used during mine reclamation. From the solid waste that is generated during the primary mining activity blocks that are useful for cutting tiles and slabs will be separated. The remaining material will be used as road metal or building material. All the care will be taken to minimize the waste generation at the source.

About 7,344 cum/year waste rock will be generated. The total waste will be stocked separately in QL area. From the waste equant dressing and will be used for the domestic consumption. The waste of various dimensions less than 2X 2' X 2' will be used for back filling the quarry. It is also supplied to crushing plants and is used as road metal. The left-out waste will be used for back filling the quarry, which will be covered with soil added with soil conditioners and mine will be reforested. In order to stabilize the slope and to prevent slope failures, Geo textile mats shall be laid over the waste material, this mat shall cover the dump area and reduce soil erosion thereby enhancing the growth of vegetation.

ENVIRONMENTAL SCENARIO

The existing Ambient Air quality in terms of particulate matter i.e. P.M_{2.5}, PM_{10.0} Sulphur dioxide (SO₂), and Nitrous oxides (NO_x) were carried through a planned field monitoring during March to May 2017.

The Summary of the average values of ambient Air Quality is furnished below

S. No	Location	P.M. _{2.5} ug/m ³	P.M. _{10.0} ug/m ³	SO ₂ ug/m ³	NO _x ug/m ³
1.	Core Zone	15	41	5.4	7.3
2.	Buffer Zone	11-20.5	29-43	4.2-6.4	6.3-7.4

The Impact of the mining operations on the core and buffer zones is estimated and is furnished below

Air Environment in Core & Buffer Zones - Post Project Scenario

PM ₁₀ µg/m ³	
Core Zone	
Base line Concentration PM 10 (Max)	50
Predicted Concentration (Max)	5.23
Overall Scenario	55.23
Specified NAAQ limit	100

PM ₁₀ µg/m ³			
BUFFER ZONE			
Village Name	Baseline Concentration (PM10)	Predicted Concentration	Overall Scenario
Yadarnatlapalli	41	< 0.581	41.58
Aitapalli	46	< 0.581	46.58
Nandagiri	50	< 0.581	50.58
Namapur	42	< 0.581	42.58
Muppidinarasayyapalli	37	< 0.581	37.58
Narasimhapalli	41	< 0.581	41.58
Lingampalli	43	< 0.581	43.58
Specified NAAQ limit Residential area			100

Air Pollution control measures:

The present ambient air quality measurements in the mine area are well within the limits. Due to proposed production of 9600 cum/year of Colour granite, there will be marginal increase in dust concentrations. Mitigative measures suggested for air pollution control are based on the baseline ambient air quality monitoring data from the point of view of maintenance of an acceptable ambient air quality in region, it is desirable that air quality should be monitored on a regular basis to check it vis-a-vis the standards prescribed by CPCB and in cases of non-compliance appropriate mitigative measures shall be adopted.

The following dust prone areas are identified for adopting proper control measures in the mine area

- i) Blasting
- ii) Excavation
- iii) Transportation

The environmental control measures which will be implemented to control the fugitive dust released from the proposed production are given below:

- Wet Drilling system and Dust proof
- Optima wire saw cutting (Using water reduces dust)
- Use of sharp drill bits for drilling holes. The charge concentration of the explosives will be between 10-40 grams per linear meter.
- Water sprinkling arrangements such as specially fabricated tankers mounted on tipper are deployed at mine site to control the fugitive dust generation from the haulage roads.
- Regular grading of haul roads and service roads to clear accumulation of material.

- Avoiding blasting during high windy periods, night times and temperature inversion periods.
- Excavation operations are suspended during periods of very strong winds.
- Massive Afforestation for control of dust emissions.
- Spraying of water on sub grade stacks.
- The vehicles and machinery are kept in well-maintained condition so that emission of fugitive constituents is minimized.
- Plantation of wide leaf trees, creepers, tall grass around working pit, along roads will help suppress dust.
- Tall trees with an average height of 5 m will be developed all along the boundary of the lease area to minimize the dispersion of the dust from the mining.
- Periodically monitoring of air quality to take steps to control the pollutants.

Vehicular emission control (VEC)

Vehicular emissions from diesel operated transport equipment can be contained. by avoiding idle running and overloading of the engine. In addition, the engines shall be periodically serviced to ensure proper tuning and exhaust gases monitored on a regular basis to check smoke and CO levels

NOSIE QUALITY

Noise levels in Various locations

S. No	Location	Results (Leq) dB (A)	
		Day time (6.0 AM- 10 PM)	Night time (10 PM to 6 AM)
1.	Core Zone	58.4	52.2
2.	Buffer	55.2	52.4

Noise pollution control.

The ambient noise level monitoring is carried out in and around the proposed mine shows that ambient noise levels are well within the stipulated limits of CPCB. Noise generation may be for an instant, intermittent or for continuous periods, with low to high decibels. Periodic inspection and checks of the risk prone areas and equipment's have to be conducted.

To control noise pollution during the proposed mining operations following steps will be practiced

- The noise generated by the machinery will be reduced by proper lubrication of the machinery and equipment.
- The workers employed should be provided with personal hearing protection equipment, with earmuffs combined as protection from the high noise level generated at the plant site.
- The provision of green barrier along the boundary will further. reduce the propagation of noise level generated.
- Limiting time exposure of workers to excessive noise.
- Carrying out blasting only during day time and avoiding the same on cloudy days and when strong wind blows across.
- Speed of trucks entering or leaving the mine is limited to moderate speed of 25 kmph to prevent undue noise from empty tippers.

WATER QUALITY**Impact on the ground water environment**

About 10 m³/day (peak demand) of water is required for the proposed project. The Entire water requirement will be met from a bore well in the core zone. The safe yield of tube wells in this region ranges from 1.5 to 3.0 LPS. As such, the ground water with drawl from the project will not impact on water availability in this study area.

PROPOSED MITIGATING MESAUSRES

Raw water treatment: It is planned to draw 10 KLD of water from the ground water resources for dust suppressions. Green belt development, drinking and sanitation for the drinking water, chlorination shall be done along with a UV and water filtration for drinking.

Waste water:

The Mine as such would produce mine seepage water during underground operations and also nominal amount of sanitary and canteen waste water in the range of 1-2 KLD. It is proposed to treat this water in a septic tank. The mine seepage water would be used for dust suppression and Green belt purpose in the QLA. The domestic effluent is sent to septic tank followed by soak pit.

Silt water control:

There shall not be any significant silt as there shall be very less amount of solid waste generated. During the monsoon period, runoff from the OB- Dump and Top soil, Topsoil dump would be checked by the garland drains and retaining wall. The retaining walls would be made from boulders by cement pointing. In addition, the overburden dump would have garland drains all around for each terrace of adequate size so that velocity is appreciable reduce to enchase the seating of the fine particulate. Contour Trenches shall be dug with in the core zone to assist in ground water recharge.

ANTICIPATED IMPACTS ON LAND

The mining area is a hilly and undulating land. The top soil in the mining area is scanty. Whatever is available will have to be excavated during the development of the mine pits. Most of this soil is rocky in nature and will get mixed with the over burden. Temporary storage of top' soil over burden may cause some loss of nutrients and this cannot be avoided. Since, the mining area is contained to only 29.00 Ha, the effect on the land environment will be negligible. There shall be no leachate from the lease area. There shall be soil erosion of the loose soil of waste dumps which shall be contained. The adverse effect of the mining activity on the bio diversity shall be mitigated by employing proper mitigating measures.

PRPOSED MITIGATING MESURES

The land management plays an important role in reducing the adverse impacts caused by surface mining operation. Land management is required in the key areas like land use scheme within the QL area, calendar plan, mine bench advancement to arrest indiscriminate degradation of landform, top soil preservation, overburden management, soil erosion control and the restoration of the mine pits. On each of these prime areas of land management, the following schemes are proposed.

Land use

The project covers a total ML area of 29.00 hectares of Government Revenue land. The Quarry lease area is a small mound / plain area and is fit for quarrying. The adjacent area is also of similar type. Hence suitable for mining purpose only. However, in the plains the land use pattern is mainly agriculture. Dry crops are grown.

IMPACT ON BIOLOGICAL ENVIRONMENT (Flora & Fauna)

The area is devoid of any significant growth of shrubs and trees and is mostly covered with granite. The entire vegetation, though scanty will disappear in areas where mining, dumping of waste rock over burden road formations and infrastructural facilities. The loss will be more than compensated by compensatory afforestation and green belt development planned in and around the mine which will rather increase the green cover and vegetation.

The fauna in the vicinity of the mine is restricted to common small species. The mine lease area is surrounded by few other Quarries and hence no significant fauna is found in the lease area. All these will be displaced from mine area and form new habitations away from mine. There are no endangered, threatened, rare or protected species in the study area. Some of the fauna displaced scared away by the project may reappear in the mining area after abandonment of the mine. As such the impact of mining project may have

- Low Impact on Regional Biological Environment.
- The Duration of the impact will be through out the mining period.
- No Significant impact on Biodiversity on regional scale.

IMPACT ON SOCIO-ECONOMIC ENVIRONMENT

Operation of mining and associated activities will result in some socioeconomic impacts of direct and indirect in nature.

Impact on human settlements

The mine is an existing project. There is no human displacement within the mine lease area. The project has no impact on human settlement.

Population growth

The project will have little impact on population growth due to immigration of people for employment. Since the project is an ongoing project, no migration of labor is envisaged

Impact on literacy and educational facilities

The literacy level of the project area (buffer Zone) is likely to increase as there will be in flux of educated people taking up jobs in the mining. Life style may change.

Impact on civic amenities

Network of roads, telephone facilities, education facilities and health care facilities may be improved due to project. A higher demand for food facilities may appear in buffer Zone.

Impact on employment

The mine shall employ 70 people. In addition to the employment in the mine additional people shall also get employment due to allied activities like transport and related business. In all, the mine shall generate an additional employment to around 60 people.

Impact on economic aspects

Per capita income shall increase slightly due to direct and indirect employment.

Impact on industrial establishments

Small scale industries and small business centers may likely to come up in the vicinity of the project.

PROPOSED MITIGATING MEASURES**Socio-economic development**

The development of the proposed project will also take into account certain social obligations involving economic and educational upliftment of the local population. This may be in the form of extending their cooperation to the State Government and the dedicated NGO's in ventures such as providing educational aids to the schools, opening of primary health centers, providing financial assistance for setting up agro-based cottage industries, improving sanitary conditions in selected villages, etc. The main objective of this development programmer is to make the project, society friendly as per of sustainable development measures.

Health and safety

Legislation in India Mines requires care for occupational health care and safety of mine workers as an integral part of the mine production management.

Occupational health care:

The mine workers are generally prone to occupational health problems relating to dust and noise. In mining operations, the workers may get affected with lung diseases resembling pneumoconiosis due to presence of dust, when exposed for a prolonged period to mineral dust particles of size less than 5 microns, particularly in the range of 1-2 microns. Indian Mine Regulations amended in 1988-89 lay down norms for safe limits of free silica levels in respirable dust in the work zone it would, therefore, be necessary to keep the work zone environment free from dust levels would be provided with dust masks.

The major occupational health problems relating to noise range from physiological and psychological problems resulting in loss of concentration to permanent impairment of hearing ability. To prevent these noises related occupational health problems, the necessary control measures as outlined earlier would be helpful

Medical facilities

For the proposed mining operation, adequate medical surveillance will be carried out, covering routine check-up and treatment of affected workers as required. The medical staff will be familiar with the latest diagnostic tools for occupational diseases. First aid medical kits would be made available at the work spots.

Drinking water

Drinking water would be supplied in rest shelters, canteens, workshops, etc. The mines rules specify a minimum per capita requirement of 2 liters per day. Drinking water taps shall not be within 6 m of any washing place, urinal or latrines as per mine regulations. The management has promised to spend an amount of Rs.50,000/- per annum, for the development of drinking water facilities in the nearby villages.

Sanitation facility

Water flushed latrines and urinals would be provided at conveniently accessible points at the scale of one seat for every 50 (or part) persons, with the associated facilities for disinfection.

Conclusion:

The Colour Granite mine is a proposed quarry which has surrounded by other 4 Quarry's with in 500mts radius in the same Sy.no. with the extents of 12.00 Ha, 1.00 Ha, 2.00 Ha and 2.00 Ha and are operating since 2009, which have obtained Environmental Clearances along with CFE/CFO from the TSPCB. The proposed project would generate direct employment for about 70 people. The project will also provide indirect Job opportunities for about 100 people and better economic standards to the local population by transportation, small shops and etc. The present annual production proposed only 9600 cu.m /Year, of Colour granite, the mine shall be worked fulfilling all statutory obligations as prescribed by DMG, DGMS/MOEF, TSPCB, the proposal has submitted for environmental Clearance to SEIAA, TS.