

February

2022

Executive Summary

Proposed Magnesite Quarry- 3.23.7 Ha

For

PUBLIC HEARING

At

S.F. No. : 55/1, Moongilpadi Village, Omalur Taluk, Salem District, Tamil Nadu

PROJECT PROPONENT

**Thiru.A.Kesavan,
Sri Venkateswara Magnesite Mines,
No.60, Kannankurichi Road,
Salem District – 636 008**

**EIA Notification 2006 Schedule 1(a) Category B1 (Cluster)
(Violation)**

**Prepared By:
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EXECUTIVE SUMMARY

1. Project Background:

Sri Venkateswara Magnesite Mines is a private company owned by Thiru A. Kesavan, Salem, Tamil Nadu. He has 55 years of experience in Mining. Sri Venkateswara Magnesite Mines has already obtained for grant of Mining lease to Magnesite Mine over an area of 3.23.7 Ha at S.F. No. 55/1 of Moongilpadi Village, Omalur Taluk, Salem District, Tamil Nadu for a period of 20 years.

Original Mining lease was granted for twenty years under G.O. Ms. No. 926 dated 14.02.1962. The first renewal of mining lease was granted for seven years under G.O.Ms.No.626 dated 01.09.1987. Further, the second renewal of the mining lease for a period of twenty years with effect from 06.02.2009 to 05.02.2029 vide G.O.(D) No.249, Industries (MMD-1) Department dated 24.12.2014.

The Mining Plan for the lease area was approved by the Indian Bureau of Mines vide Letter No.TN/SLM/MP/MG-137-MDS dated 30.11.1988. The Scheme of Mining was also approved the Indian Bureau of Mines vide letter No.TN/SLM/MS/LST-64-MDS dated 05.04.1999. The Modified Mining was also approved the Indian Bureau of Mines vide letter No.TN/SLM/MP/MG-1958-MDS dated 26.08.2015 for the period of 2014-2015 to 2018-2019. Mining of Magnesite was carried out after obtaining necessary permissions from 2014 – 2017.

Later, as per MoEFCC Notification S.O.804 (E) dated 14.3.2017, our project is considered as violation since we are operating mine without obtaining prior EC. Thiru A.Kesavan, Proprietor of Sri Venkateswara Magnesite Mines has stopped the mining operations w.e.f 10.01.2017 and applied for Environmental Clearance. The project has been accorded with Terms of Reference from SEIAA, Tamilnadu vide Lr. No. SEIAA-TN/F.No.6223/TOR-356/2018 dated 17.05.2018.

Meanwhile, the Modified Mining Plan was lapsed and the project proponent applied for Review of Mining Plan to Indian Bureau of Mines for the period of 2019-2020 to 2023-2024. The review of Mining Plan was also approved by the Indian Bureau of Mines vide letter No. TN/SLM/MG/ROMP-1557.MDS dated 08.08.2019. Public Hearing is being conducted as per conditions of Terms of Reference.

The quarry operation is proposed to carry out with Opencast "A" Category other than fully mechanized operations with hydraulic rock breaker, Excavator and for loading. The existing depth of mining is about 21.0m and the dimensions of pit is Length 226m x Width 63m x Depth 21m. The

proposed depth of mining is about 30.0 m (1.0m Top Soil + 29.0m Magnesite) and the Ultimate pit size is Length 254m x Width 135m x Depth 30m.

The total geological reserves are estimated as 1229250 tonnes, total reserves estimation are 469445 tonnes and recoverable reserves are estimated as 56334 tonnes by area cross sectional method. The total Yearwise Production reserves are estimated as 56008 Tonnes. The life of the mine is computed as five years at the annual production rate of 11202 tonnes of Magnesite.

The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km.

2. Nature & Size of the Project

The existing Magnesite Quarry lies over an extent of 3.23.7 Hectares land is located at S.F. No.55/1, Moongilpadi Village of Omalur Taluk, Salem District.

Table 1: Brief Description of the Project

S. No.	Particulars	Details
1	Name of the Project	Sri Venkateswara Magnesite Mines
2	Latitude	11° 43' 59.16" N
3	Longitude	78° 06' 59.13" E
4	Site Elevation above MSL	352 m from MSL
5	Topography	Moderately elevated terrain
6	Land use of the site	Government Poramboke Land
7	Extent of lease area	3.23.7 Ha
8	Nearest highway	<ul style="list-style-type: none"> • SH 188, Salem Junction – Yercaud, 6.44km, S • NH 44, Srinagar – Kanyakumari Highway, 3.49 km, SW
9	Nearest railway station	<ul style="list-style-type: none"> • Salem Junction – 6.79 km, S • Karuppur Railway Station – 2.74 km, WSW
10	Nearest airport	<ul style="list-style-type: none"> • Salem Airport – 7.92 km, NW • Tiruchirappalli International Airport – 125.45 km, SE
11	Nearest town / city	<ul style="list-style-type: none"> • Town - Karuppur - 2.76 Km, SW • City - Salem - 9.48 Km, SSE • District - Salem- 9.48 Km, SSE
12	Rivers / Canal	<ul style="list-style-type: none"> ❖ East Sarabanga River – 6.49km, WNW ❖ West Sarabanga River – 9.39 km, W ❖ Thirumanimuthar River – 9.81 km, SE

13	Lake	<ul style="list-style-type: none"> ❖ Samuthiram Eri - 3.64km, WSW ❖ R.C.Cettipatty Lake – 6.92km, WNW ❖ Selatthampatti Eri – 8.15km, SSW ❖ Pallapatti Lake – 8.18 km, SSE ❖ Kannankurichi Lake – 8.33km, SSE ❖ Kannankurichi Puthu Eri – 8.48km, ESE ❖ Muthunayakkanpatti Lake – 9.50km, WSW ❖ Pannapatti Lake – 10.86km, NW ❖ Vadamaneri Lake – 10.96km, NW ❖ Thathampatti Lake – 11.38km, SSE ❖ Kumaragiri Lake – 11.54km, SE ❖ Yercaud Lake – 11.70km, ENE ❖ Ammal Lake – 12.10km, SSE ❖ Poosaripatti Lake – 12.31km, NNW ❖ Dasagasamudram Lake – 13.92km, NNW ❖ Taamarai Kuttai – 14.28km, WSW ❖ Poolavari Lake – 14.70km, S
14	Hills / valleys	Karuvalli Hills – 14.46 km, NW
15	Archaeologically places	Nil in 15 km radius
16	National parks / Wildlife Sanctuaries	Kurumbapatty Zoological Park – 6.06 km, ENE
17	Reserved / Protected Forests	<ul style="list-style-type: none"> • Nagarmalai R.F. – 2.91 km, SE • Pannaikadu R.F. – 5.52 km, NNE • Kaniyeri R.F. – 9.16 km, N • Kapputhi R.F. – 10.10 km, E • Meryland R.F. – 12.83 km, NE • Kanjamalai R.F. – 13.00 km, SSW • Karuvattuparai R.F. – 13.37 km, N • Jerugumalai R.F. – 13.47 km, SSE
18	Seismicity	Proposed Lease area comes under Seismic zone-II (low risk area) as per IS 1893 (Part-1) : 2002
19	Defense Installations	Nil in 15 Km radius

3. Need for the Project

- ❖ Magnesite is very important chemical mineral and is the principal raw material for the production of refractory material used as a lining in blast furnaces, kilns and incinerators.
- ❖ The need for mining of the chemical grade Magnesite from the project (mine lease area) has arisen to meet the current situation of demand supply gap faced by company.
- ❖ Magnesite is used in the refractory material used as a lining in blast furnaces, kilns and incinerators projects.
- ❖ The smaller domestic sales will also bring good returns financially to state governmental and central governmental in the form taxes, cesses, duties, etc.
- ❖ As the magnesite mining operations in the proposed mine will employ about 18 persons directly and about 17 persons directly and about 100 persons on indirect basis through allied opportunities in logistics, trading, repining works etc.

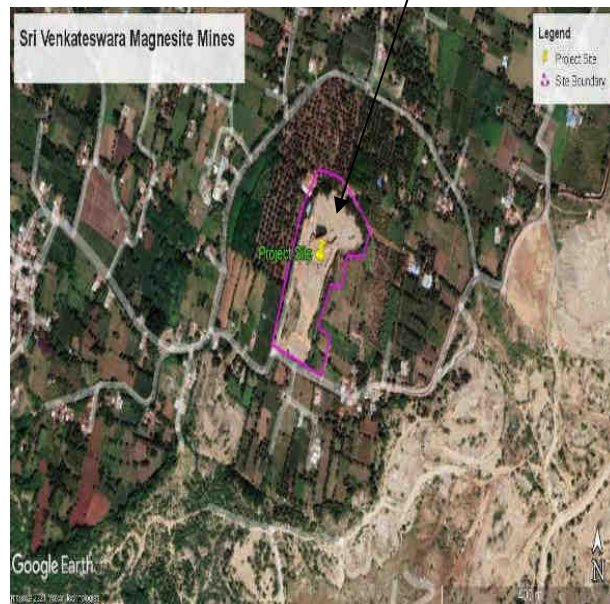
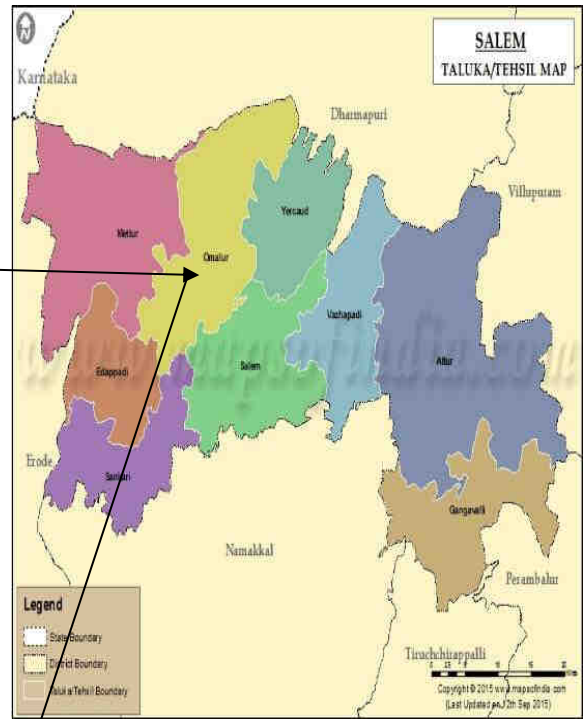
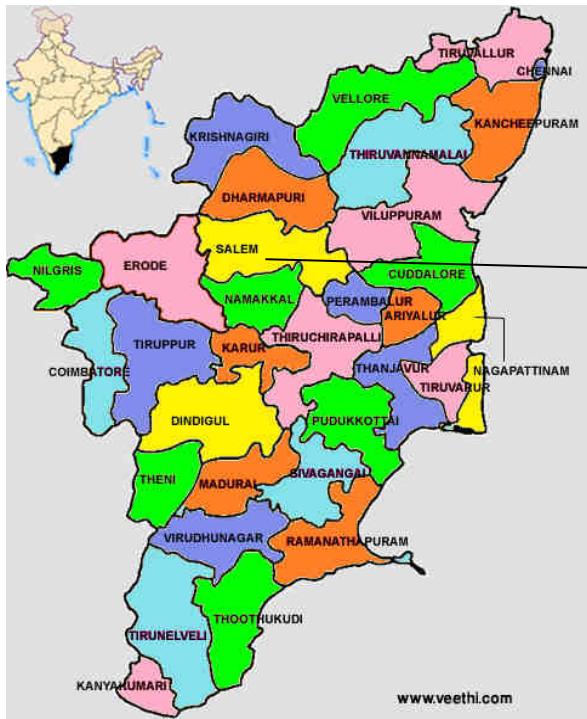


Figure 1 Location Map of the Project Site

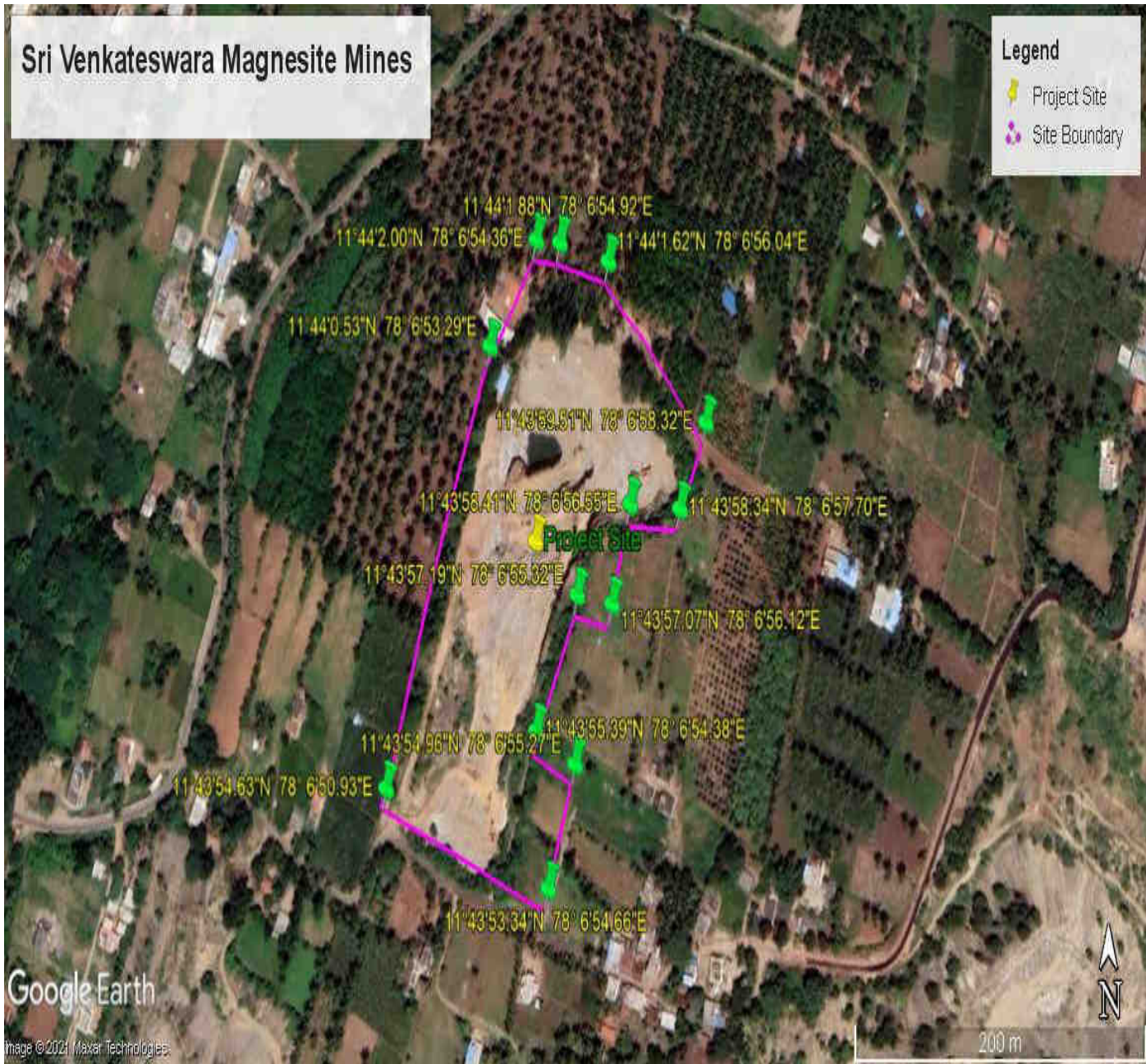


Figure 2 Google Image of the Project Site

4. Reserves and Resources

The lease area is an existing Magnesite Mine quarry. The total Geological reserves are estimated as 469445 Tonnes and Recoverable reserves are estimated as 56334 Tonnes by cross sectional method.

Table 2 Total Reserves and Resources

Classification	UNFC Code	Total Reserve Tonnes	Recoverable Reserve in tonnes	Grade
A. Total Mineral Reserves				
Proved Mineral Reserve on 10.06.2019	111	469445	56334	Non-Refractory
Probable Mineral Reserve	121 & 222	-	-	-
B. Total Remaining Resources		-	-	-
Feasibility mineral Resource	211	-	-	-
Prefeasibility mineral resource	221	759805	91176	Non-Refractory
Measured mineral resource	331		-	-
Indicated mineral resource	332		-	-
Inferred mineral resource	333		-	-
Reconnaissance mineral resource	334		-	-
Total Reserves + Resources		1229250	147510	-

5. Calculation of Reserves/Resources Section Wise

The lease area is an existing Magnesite mine quarry. The geological and mineable reserves are estimated by cross sectional method. The Reserves estimation are described in below Table 3 and Resources estimation are described in Table No.4

Table 3 Reserves Estimation

SECTION	BENCH	L (m)	W (m)	D (m)	VOLUME (CUM)	BULK DENSITY	OVER BURDEN (T)	TOTAL RESERVE (T)	MINERAL REJECT 88% (T)	RECOVERABLE RESERVE 12% (T)	TOTAL WASTE (T)
OVERBURDEN											
XY-A1B1	I	16	46	1	736						
XY-A2B2	I	1	54	1	54						
XY-A3B3	I	1	42	1	42						
XY-A4B4	I	1	80	1	80						
	TOTAL				912	2	1824				1824
MAGNESITE											
XY - A1B1	II	14	28	4.0	1568						
	III	14	45	6.0	3780						
	IV	30	88	6.0	15840						
	V	52	112	6.0	34944						
	VI	43	94	5.0	20210						
	TOTAL				76342	2.5		190855	167952	22903	167952
XY - A2B2	II	1	31	6.0	186						
	III	1	45	6.0	270						
	IV	23	66	6.0	9108						
	V	50	64	6.0	19200						
	VI	50	46	5.0	11500						

	TOTAL				40264	2.5		100660	88581	12079	88581
XY - A3B3	II	1	11	6.0	66						
	III	1	35	6.0	210						
	IV	50	58	6.0	17400						
	V	50	39	6.0	11700						
	TOTAL				29376	2.5		73440	64627	8813	64627
XY - A4B4	II	1	42	6.0	252						
	III	5	85	6.0	2550						
	IV	55	73	6.0	24090						
	V	46	54	6.0	14904						
	TOTAL				41796	2.5		104490	91951	12539	91951
	GRAND TOTAL				187778	2.5	1824	469445	413111	56334	414935

Table 4 Resources Estimation

CLASSIFICATION	SECTION	BENCH	L (m)	W (m)	D (m)	VOLUME (CUM)	BULK DENSITY	TOTAL RESERVE (T)	MINERAL REJECT 88% (T)	RECOVERABLE RESERVE 12% (T)	TOTAL WASTE (T)
Mineral Locked up in benches	MAGNESITE										
	XY - A1B1	II	1	3	4.0	12					
		III	3	14	6.0	252					
		IV	13	34	6.0	2652					
		V	22	51	6.0	6732					
		VI	32	70	5.0	11200					
	II	1	3	6.0	18						

	XY - A2B2	III	1	16	6.0	96					
		IV	23	35	6.0	4830					
		V	50	54	6.0	16200					
		VI	50	73	5.0	18250					
	XY - A3B3	II	1	3	6.0	18					
		III	1	16	6.0	96					
		IV	1	35	6.0	210					
		V	1	54	6.0	324					
	XY - A4B4	VI	50	93	5.0	23250					
		II	1	3	6.0	18					
		III	1	16	6.0	96					
		IV	7	35	6.0	1470					
			V	16	55	6.0	5280				
			VI	62	108	5.0	33480				
			TOTAL				124484	2.5	311210	273865	37345
Mineral Locked up in 7.5M Boundary Barrier	114.6 X 10.0 = 1146 SQ.M			29	33234						
	672.2 X 7.5 = 5041.5 SQ.M			29	146204						
					179438	2.5	448595	394764	53831	394764	
	TOTAL						759805	668629	91176	668629	

6. Yearwise Production

The life of the mine is computed as Five years at a production rate of 11202 Tonnes of Magnesite per annum. From Total ROM the Magnesite deposits are categorized with the following percentage Magnesite 12% & Mineral Waste 88%.

Table 5 Year wise Tentative Excavation

Year		Total Tentative Excavation	OB	ROM		Total waste	Ratio-Ore: Waste
				Ore (Magnesite @12% of ROM)	Mineral Reject (@ 88% of ROM)		
1		2	3	4	5	6	7
2019-2020 (01.08.2019 to 31.03.2020)	In Cum	21188	736	2543	18645	19381	1:7.62
	In Ts	52970	1472	6356	46614	48086	1:7.56
2020-2021	In Cum	61202		7344	53858	53858	1:7.33
	In Ts	153005		18361	134644	134644	1:7.33
2021-2022	In Cum	47392	54	5687	41705	41759	1:7.34
	In Ts	118480	108	14218	104262	104370	1:7.34
2022-2023	In Cum	24138	42	2897	21241	21283	1:7.34
	In Ts	60345	84	7241	53104	53188	1:7.34
2023-2024	In Cum	32772	80	3933	28839	28919	1:7.35
	In Ts	81930	160	9832	72098	72258	1:7.34
Total	In Cum	186692	912	22404	164288	165200	1:7.37
	In Ts	466730	1824	56008	410722	412546	1:7.36

The average production of Magnesite per year will be about $22404/5 = 4480.8$ cum ($4480.8 \times 2.5(\text{B.D}) = 11202$ tonnes).

		I	1	42	1		42				
		II	1	11	6.0	66					
		III	1	35	6.0	210					
		IV	41	58	6.0	14268					
		V	41	39	6.0	9594					
TOTAL IN Cum						24138	42	24138	21241	2897	21283
TOTAL IN Ts						60345	84	60345	53104	7241	53188
2023-2024	XY - A4B4										
		I	1	80	1		80				
		II	1	42	6.0	252					
		III	5	85	6.0	2550					
		IV	45	73	6.0	19710					
		V	38	45	6.0	10260					
TOTAL IN Cum						32772	80	32772	28839	3933	28919
TOTAL IN Ts						81930	160	81930	72098	9832	72258
GRAND TOTAL IN Cum						186692	912	186692	164288	22404	165200
GRAND TOTAL IN Ts						466730	1824	466730	410722	56008	412546

7. Mining

The nature of deposit and the anticipated annual production level, the method of mining is proposed as opencast “A” Category other than fully mechanized. The development and production of mining operations will confine to this area for the next five years in existing working pit from North to Southern side of the Mining lease area. The top soil will be utilized for the formation of mine roads, construction of bund and afforestation purpose. Foot paths and ramps and roads are suitably formed for easy movement of men and material. A bund will be constructed around the pit to prevent accident call and inrush of rain water. Haul roads, to conform to statutory standards will be made according to convenience for smooth transport of ore and waste. Wherever necessary, crossing platforms will be provided in the haul roads at suitable point.

8. Water Requirement

The quantity of water required for the mine lease area of 3.23.7 ha is estimated to be 2.5 kLD. Drinking water is available from nearby villages near the project site and this fulfills the requirement at site.

Table 7 Water Balance

S.No.	Purpose	Quantity
1.	Drinking Water use (For labours)	0.750 KLD
2.	Green belt	0.250 KLD
3.	Dust suppression	1.5 KLD
Total		2.5 KLD

9. Man Power

Total manpower required for the project is approximately 17 persons. Workers will be from nearby villages.

Table 8 Man Power

S.No.	Name of the Employment	No. of Employees
1.	Supervisory	
	Manager	1 No.
	Part-time Mining Engineer	1 No.

	Clerk	1 No.
2.	Labour	
	Highly Skilled	-
	Skilled	2 Nos
	Semi-skilled	-
	Unskilled	12 Nos
	Total	17 Nos

10. Land Requirement

The Mining Lease are in S.F. No.55/1 over an extent of 3.23.7 Ha in Moongilpadi Village, Omalur Taluk, Salem District is Government Poramboke Land and is not covered in Forest area of any kind. There is no reserve forest or social forest within the vicinity of the mining lease. The present and post mining land use pattern is given below Table No.9

Table 9 Land Use Breakup

S.No.	Description	Present Area (Ha.)	Area to be reclaimed & rehabilitated at the end of present ROMP period (Ha.)	Area to be reclaimed & rehabilitated at the end of life of mine (Ha.)
01.	Mining (Quarry)	1.42.0	0.74.0	2.54.0
02.	Waste dump	0.38.0	Backfilling	Backfilling
03.	Office-Infrastructure	0.01.0	0.01.0	0.02.0
04.	Mineral Stack/ Processing Yard	-	-	-
05.	Sub-grade Mineral stacks	-	-	-
06.	Mine Roads	0.05.0	0.01.0	0.10.0
07.	Area under Plantation	0.05.0	0.52.5	0.57.7
08.	Unutilized Area	1.32.7	-	-
	TOTAL	3.23.7	1.28.5	3.23.7

11. Human Settlement

The human settlements nearby areas are given in Table No. 10

Table 10 Habitation

S.No.	Direction	Village	Distance	Population
1	North	Moongilpadi	1.0 km	2000
2	West	Kollapatti	1.6 km	600
3	East	Kaminaickanpatti	1.6 km	500
4	South	Vellakalpatti	2.4 km	2000

12. Power Requirement

The project does not require any power supply for the mining operations. Electricity is used only in office premises and other internal infrastructure for which necessary permission will be obtained from TNEB. 16 Litres diesel per hour for excavator will be used for Magnesite mining.

13. Scope of the Baseline Study

This chapter contains information on existing environmental scenario on the following parameters.

1. Micro – Meteorology
2. Water Environment
3. Air Environment
4. Noise Environment
5. Soil / Land Environment
6. Biological Environment
7. Socio-economic Environment

13.1 Micro – Meteorology

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

- i) Average Annual Maximum Temperature : 34.1 °C
- ii) Average Annual Minimum Temperature. : 22.9 °C
- iv) Average Annual Rainfall of the area : 898 mm

13.2 Air Environment

Ambient air monitoring was carried out on monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 5 km. radius, air quality survey has been conducted at 6 locations. Major air pollutants like Particulate Matter (PM10), Particulate Matter (PM2.5), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) were monitored and the results are summarized below. The baseline levels of PM10 (68-36 µg/m³), PM2.5 (36-24 µg/m³), SO₂ (12-4µg/m³), NO₂ (23-17 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from March to May 2021.

13.3 Noise Environment

Ambient noise levels were measured at 6 locations around the proposed project site. The maximum Day noise and Night noise were found to be 52.4 dB(A) and 43.2 dB(A) respectively in Karuppur Village. The minimum Day Noise and Night noise were 47.2 dB(A) and 38.1 dB(A) respectively which was observed in Moongilpadi Village.

13.4 Water Environment

- The average pH ranges from 7.89-8.74
- TDS value varied from 586 mg/l to 2032 mg/l
- Hardness varied from 490 to 1210 mg/l
- Chloride varied from 15.4 to 436.9 mg/l

13.5 Land Environment

The analysis results shows that the majority of soil in the project and surrounding area is alkaline in nature and pH value ranges from 8.92 to 9.85 with organic matter 0.0135 % to 0.0168 %.

The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

The proposed Mining lease area is mostly dry barren ground with small shrubs and bushes. No specific endangered flora & fauna exist within the mining lease area.

13.7 Socio Economic Environment

Omalur is a town in the Salem district in the State of Tamil Nadu and rich with the Magnesite. The Moongilpadi village has a population of 3946 of which 2074 are males while 1872 are females as per Population Census 2011. In Moongilpadi Male literacy stands at 70.92 % while female literacy rate was 51.23 %.

14. Rehabilitation/ Resettlement

The overall land of the mine is Government Poramboke land. There are no displacement of the population within the project area and adjacent nearby area. Social development of nearby villages will be considered in this project.

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement.

15. Greenbelt Development

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major component of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
3. Trees like Casuarina will be planted along the lease boundary at a rate of 30 trees per annum with an interval of 5m.
4. The rate of survival expected to be 70% in this area.

Table 11 Plantation / Afforestation Program

Year	Name of species	Area in Ha.	No of species	Spacing	Survival
2019 - 2020	Casuarina	0.11.5	30	5m	70%
2020 – 2021	Casuarina	0.11.0	30	5m	70%
2021 - 2022	Casuarina	0.10.0	30	5m	70%
2022 - 2023	Casuarina	0.10.0	30	5m	70%
2023 - 2024	Casuarina	0.10.0	30	5m	70%
Total		0.52.5	150		

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

1. Water sprinkling will be done on the roads & unpaved roads.
2. Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
3. Plantation will be carried out on approach roads, solid waste site & nearby mine premises.
4. To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

1. Periodical monitoring of ambient noise will be done as per CPCB guidelines.
2. No other equipment except the transportation vehicles and excavator for loading will be allowed.
3. Noise generated by these equipments shall be intermittent and does not cause much adverse impact.

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

- i. Environmental Monitoring of the surrounding area
- ii. Developing the green belt/Plantation

- iii.Ensuring minimal use of water
- iv.Proper implementation of pollution control measures

18. Environmental Monitoring Program

A monitoring schedule with respect to Ambient Air Quality, Water & Wastewater Quality, Noise Quality as per Tamil Nadu State Pollution Control Board (TNPCB) shall be maintained.

19. Project Cost

The total project cost is **Rs. 26,00,000** for deployment of machinery and creation of infrastructural facilities like approach road, Mine office / Workers Shed, First Aid Room etc., including electrifications and water supply.

20. Corporate Environmental Responsibility

The Corporate Environment Responsibility (CER) fund will be provided to the below activity.

Table 12 CER Cost

S.No.	CER Activity	CER 2% of the Project Cost (Rs.)
1.	Provision of basic amenities such as Drinking water, Hygienic Toilets facilities to Government Higher Secondary School in Thekkampatti Village.	52,000
Total		52,000

21. Benefits of the Project

- There is positive impact on socio-economics of people living in the villages. Mining operations in the subject area has positive impact by providing direct and indirect jobs opportunities.
- The project is environmentally compatible, financially viable and would be in the interest of construction industry thereby indirectly benefiting the masses.
- Quarrying in this area is not going to have any negative impact on the social or cultural life of the villagers in the near vicinity.