M/s. PARASAKTI LIMESTONE MINE

Jettipalem (Village & Post), Rentachintala (Mandal)
Guntur (Dist.) – A.P.

MINES ENVIRONMENTAL REPORT (FORM – V) FOR THE FINANCIAL YEAR 2019-2020

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ACKNOWLEDGEMENT

M/s. UNIVERSAL ENVIRO ASSOCIATES express since debt of gratitude to **M/s. PARASAKTI LIME STONE MINE (M/s. Parasakti Cement Industries Limited)** for the opportunity given by assigning the preparation of Environmental Statement (Audit) for their Mines located near Jettipalem (V) Rentachintala (M), Guntur (Dist) of Andhra Pradesh. The Environmental Statement (Audit) is prepared for the financial year from April, 2019 to March, 2020. Special mention needs to be made of executives of M/s. Parasakti Lime Stone Mines (M/s. Parasakti Cement Industries Limited) for their cooperation and assistance during the preparation of Environmental Statement. We also wish to acknowledge our gratitude to all of them who helped during the data collection and report preparation.

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FORM - V
(See rule 14)

MINES ENVIRONMENTAL REPORT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH 2020.

PART – A

1	Name and address of the owner/ occupier of the industry operation or process.	**M/s. Parasakti Cement Industries Ltd.,** Plot No. 8-3-214/21, Srinivasa Nagar Colony (West), Hyderabad – 500 038. **Factory:** Jettipalem, Rentachintala Mandal, Guntur District, Andhra Pradesh.
2	Date of last environmental audit Report submitted	September, 2020
3	Production Capacity (units)	1.8 Million tons/annum.
4	Year of establishment	2005

PART – B

Water and Raw Material Consumption		
a) Water consumption	**50.55**	KLD
1. Dust suppression	16.87	KLD
2. Plantation & Greenbelt Development	25.30	KLD
3. Domestic	8.38	KLD

Name of Products	Water consumption per unit of product (KL/MT)	
	During the previous financial year (2018-2019)	During the current financial year (2019-2020)
Limestone	0.0095 m^3/MT Limestone	0.0164 m^3/MT Limestone

ii) Raw material & chemicals consumption				
Name of raw materials	Name of product	Unit	Consumption of raw material per unit of output	
			During the previous financial year (2018-2019)	During the current financial year (2019-2020)
Explosives	Limestone	Kg/MT	0.134	0.114

PART – C
POLLUTION GENERATED
(Parameter as Specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (Kg/day) 2019-2020	Concentrations Of Pollutants in Discharges (mg/L) 2019-2020	Percentage of variation from prescribed standards with reasons
a) Waste Water: (There is no process waste water)			
b) Air: There is no source emissions, only dust generation during mining operation is monitored by establishment ambient air quality sampling stations at various places in mine premises and surrounding areas. The generated data is shown in table 3. Analyzed data shows all the values are within the prescribed standards of APPCB.			

PART - D
HAZARDOUS WASTE

(As specified under Hazardous wastes / Management and handling Rules, 2003)

Hazardous wastes	Total Quantity per year	
	During the previous financial year (2018-2019)	During the current financial year (2019-2020)
From Process		
Waste Lube Oil	5.20 KL	7.095 KL
Waste Grease	NIL	1.82MT
Batteries scrap- used Batteries	NIL	1.12MT
From Pollution Control facility		
	NIL	NIL
Quantity recycled or Re-utilized		
	NIL	NIL

Note: Waste Oil, Grease and Batteries scrap- used Batteries generated from limestone mine.

PART – E
SOLID WASTES

Solid Wastes	Total Quantity	
	During the previous financial year (2018-2019)	During the current financial year (2019-2020)
From Process		
From Process Black cotton soil generating In mining operation		
	19500 MT	58290 MT
From Pollution Control Facilities		
	NA	NA
Quantity recycled or reutilized within the unit		
For Plantation Purpose	19500 MT	29145 MT

PART - F

Please specify the characteristics (in terms of concentration and quantum) of Hazardous as well as solid wastes and indicates disposal particles adopted for both these categories of wastes.

About 1.82 MT waste grease, 1.12 batteries scrap-used batteries and 7.095 Used Lube oil have been generated from the Mines. 1.695 KL Used Lube oil is internally used for self consumption. 5.40 KL used lube oil, 1.82 MT waste grease and 1.12 batteries scrap-used batteries sold to M/S Sri Padmavathi Energy solutions India (p) Ltd.

Solid waste as black cotton soil, negligible in quantity, generated during mining operation is stored in dumps and used in greenbelt developments.

PART – G

Impact of the pollution control measures on conservation of natural resources and consequently on the cost of production.

Evaluation on this aspect is being carried. Reclamation of mined out area as development of water storage reservoirs will be done to facilitate increase in water regime after completion of mining in lease hold area.

PART - H

Additional investment proposal for environmental protection including abatement of pollution.

1. An amount of Rs. 1,62,840/- per annum is being spent on monitoring for Mines.
2. Total Expenditure on the greenbelt development for the year 2019-20 is Rs.17,12,964/-

PART – I

Any other particulars in respect of environment protection and abatement of pollution.

The Management objective is to achieve the production without affecting the physical, chemical and biological environments of the nearby vicinity.

Development of deep sump in mines has been taken up, so that rain water can be stored for use during summer. The same sump also helps in recharging of the underlying aquifer.

Rain harvesting is practiced and same water is being used for dust suppression. For noise pollution control, down the hole initiation system are used. Over and above greenbelt is developed along the boundary of mine area for reducing the impact of noise due to mining activity on the surrounding Environment. Regular water sprinkling is done at mine face and haulage roads to suppress dust. Conservation of resources is done following approved mining plan.

1. INTRODUCTION

Name of the Mine	:	Parasakti Limestone Mine
Name of the Owner	:	Mr. P.Yashwanth Krishna
Location	:	M/s Parasakti Cement Industries Limited
		POST: JETTIPALEM – 522421.
		Mandal: Rentachintala, District: Guntur. A.P.
Production Capacity	:	1.8 million tons per annum.

2. OBJECTIVE OF THE STUDY:

The objective of the present study is to review the performance of pollution control systems installed by the industry so as to identify efficient pollution prevention and control systems, which could be beneficial to both environment and its components. And also **Inserted by rule 2 of the Environment (Protection) second Amendment & Rules, 1992 vide G.S.R. 329 (E), dated: 13-3-1992.** Every person carrying on an Industry, operation or process requiring consent under section 25 of the water (prevention and control of pollution) Act 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution), Act 1981 (14 of 1981) or both or authorization under the Hazardous wastes (Management and Handling) Rules, 1989 issued under the Environmental (Protection) Act 1986 (29 of 1986) shall submit an environmental audit report for the financial year ending 31st March in Form – V to the concerned state pollution control board on or before the 30th day of September every year beginning 1993.

3. BENEFITS OF ENVIRONMENTAL AUDIT

Environmental audit creates awareness in the conservation of natural resources and helps to improve production safety and health. The benefits of audits are:

1. It helps in reduction of raw material consumption by way of waste minimization and adoption of recovery of waste and recycles the same.
2. Determined the performance of process systems and helps to improve the systems.
3. Efficiency of pollution control systems can be calculated.
4. This gives the awareness of environmental organization in the industry.
5. Data available will help the management for use in the plant modification and adopting pollution control for different types of technology.
6. It helps to identify pollution creating systems and exposure to it by the employees for taking remedial measures.
7. The management will be assisted in complying with local, regional and national laws regulations by adopting standards.
8. It helps to identify hazardous wastes, handling measures taken and exposure to litigation can be reduced.
9. To determine the impact on the surrounding environment due the disposal of its pollutants and identify suitable preventive measures.
10. Energy saving systems can be adopted by considering fuel consumption data.

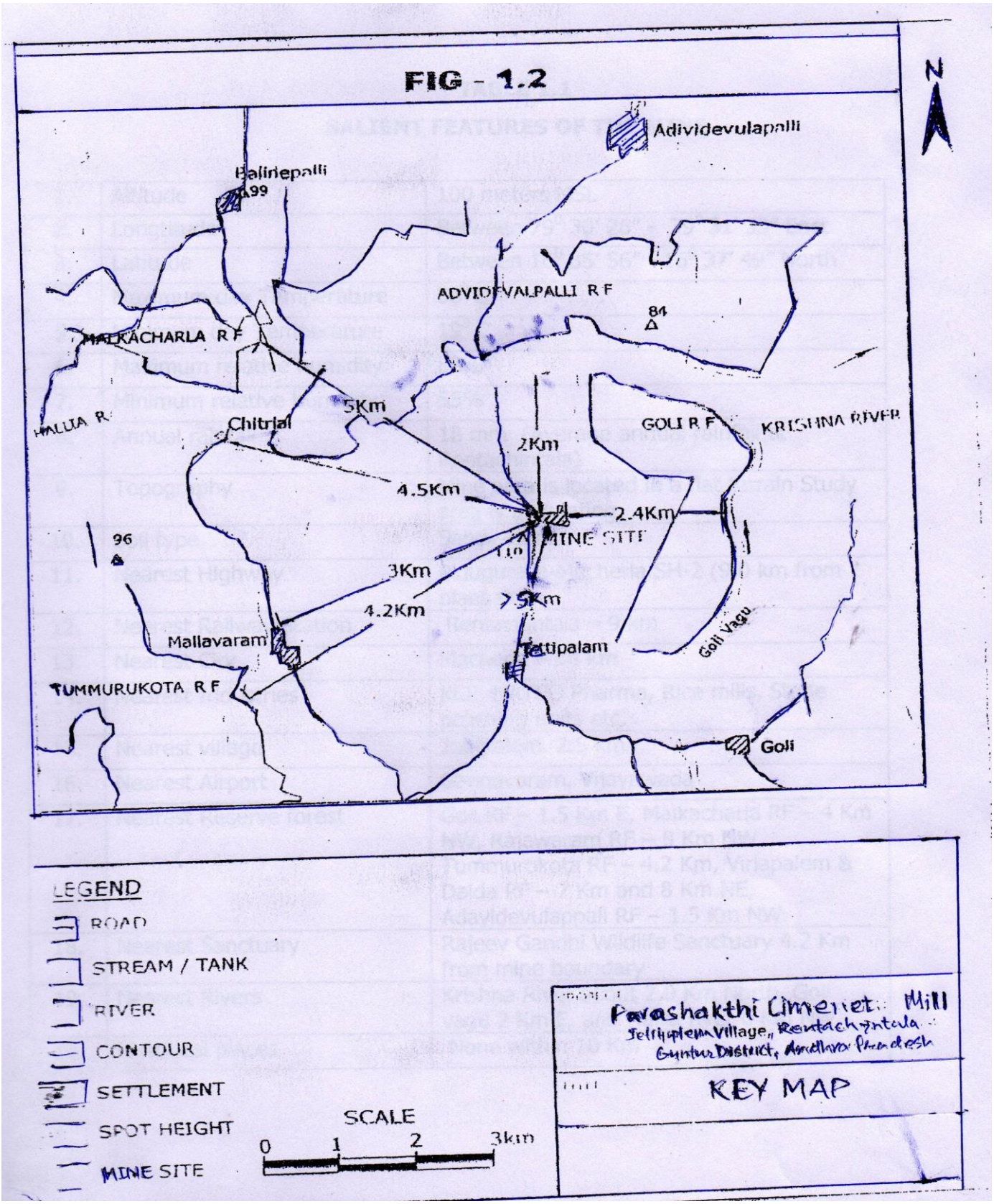
FIG - 1.2
N
Adividevulapalli
Balinepalli
99
ADVIDEVALPALLI R F
84
MALKACHARLA R F
HALLIA R
Chitrial
5Km
2Km
GOLI R F
KRISHNA RIVER
4.5Km
2.4Km
MINE SITE
96
3Km
4.2Km
Mallavaram
Tettipalam
Goli Vagu
TUMMURUKOTA R F
Goli
LEGEND
ROAD
STREAM / TANK
RIVER
CONTOUR
SETTLEMENT
SPOT HEIGHT
MINE SITE
SCALE
0
1
2
3km
Parashakthi Limenet Mill
Jetrigupem Village, Rentachintala
Guntur District, Andhra Pradesh
KEY MAP

M/s. Parasakti Limestone Mine (M/s. Parasakti Cement Industries Limited) has entrusted the task of preparation of Environmental Statement (Audit) to M/s. Universal Enviro Associates (UEA), Hyderabad. An in-depth study was conducted by UEA, to review the process efficiency, waste water generated and the present treatment systems, emissions generated and air pollution control equipment provided mode of solid waste collection and disposal and the other associated problems leading to the pollution and impact on environment.

4. LOCATION:

The Parasakti Limestone Mine of M/s. Parasakti Cement Industries Limited is situated in Jettipalm Village, Rentachintala Mandal, Guntur district of Andhra Pradesh. The area is located between Latitude $16^0$35'24" - $16^0$37'46" N and Longitude $79^0$29'22" - 79^0 30'48" E. The mine is covered in Survey of India Topo sheet no. 56 P/6 & 56 P/10, Krishna River, which is perennial river, is flowing in the Northern direction at a distance of 2.0 Km from the mines area. Salient features of the mine are given in **Table 1.1.**

5. MINING PROCESS:

Parasakti Cement Industries Limited mine is operated by the method of mechanized open cast mining. The operations are conducted as per the mining plan approved by IBM. The operations involved are:

i) Drilling of deep blast holes of 115 mm dia using DTH drill machines with matching capacity air compressors. The spacing and burden is around 5m and 3m respectively.

ii) Blasting the holes using slurry explosives and ammonium nitrate-fuel oil mixture.

iii) The blasted material is loaded into dumpers using excavators.

iv) The dumpers shall be hauled to the crushing plant located near the pit top. After crushing, the material shall be conveyed to the stockpile in the factory using a belt conveyor.

B.C soil that covers the limestone deposit is dozed off and separately stacked for forestation purposes in the worked out top bench around ultimate pit limit and mine avenue roads. This soil is occurring at some places only. No overburden or side burden is proposed to be handled during the plan period. A list of mining machinery that are being used at Parasakti Limestone Mine of M/s. Parasakti Cement Industries Limited is given in table 1. The process flow of mining is given in Fig.2.

Fig.1 MINING PROCESS

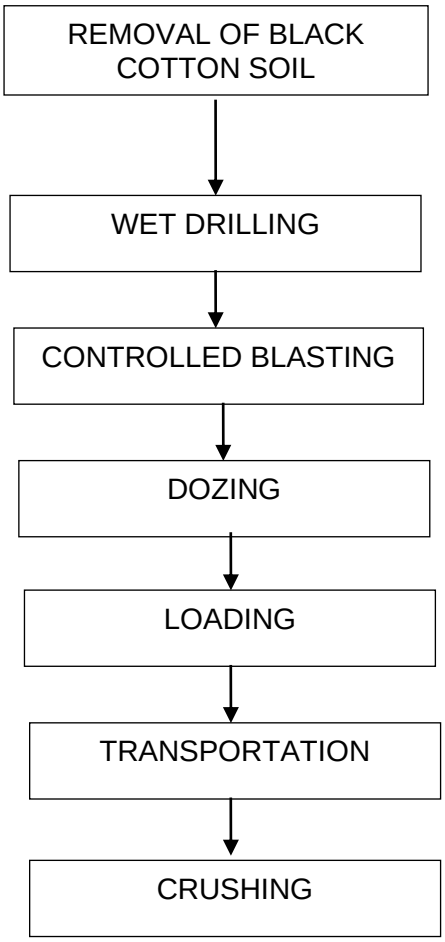

Table 1. List of Mining Machinery

Equipment	No. of Units	Capacity	HP
EXCAVATER	02	3.300 cum	395
EXCAVATER	01	0.800 cum	138
DUMPER	05	35.0Tons	399
DOZER	01	30.0Tons	212
Air Compressor(Non Electric)	01	450 cfm	138 KW
Compressor(Electric)	01	-	-
Rock Drill	02	115.mm	---
Water Tanker	01	10000.00 Lts	139

6. WATER ENVIRONMENT

Atmospheric precipitation in the form of rain is the only source for both surface water and ground water in the mining area.

As the mining activity is carried out deep into the ground and depending on the ground water table prevailing in the area, ground water flows into mine and will be drained out for continuing the mining activity. The mine drainage water is to be characterized to have an idea of the water quality in the mine area. The mining activity is carried out at elevated area and so far water table was not touched and hence there is no mine drainage, except rain water accumulation during rainy season. Samples were collected from various locations in and around mining area and analyzed. The water quality data is presented in Tables 2.

The generated data for water quality shows that all the samples meet the standards prescribed by statutory authorities.

Water table level with reference to existing ground level is 47 – 48 m. Mining operation has not intersected water table.

Table 2
AVERAGE VALUES OF WATER ANALYSIS

S No.	Parameters	LOCATIONS				
		1	2	3	4	5
1.	Odour	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
2.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Colour (Hazen units)	2.71	3.1	3.4	5.5	3.9
4.	pH	7.80	7.4	7.6	7.6	7.3
5.	Turbidity (NTU)	2.75	1.4	1.4	3.7	1.4
6..	Total hardness as $CaCO_3$	202	286	318	191	289.0
7.	Iron as Fe	0.17	0.1	0.2	0.1	0.1
8.	Mineral Oil	BDL	BDL	BDL	BDL	BDL
9	Chlorides as Cl	85.7	104	116	90.6	86.4
10	TDS	449	531	743	389	524
11	Calcium as Ca	53.1	76.2	83.7	49.4	73.9
12	Magnesium as Mg	20.95	21.8	24.1	20.1	21.1
13.	Copper as Cu	BDL	BDL	BDL	BDL	BDL
14.	Manganese as Mn	BDL	BDL	BDL	BDL	BDL
15.	Sulphates as as SO_4	42.3	75.4	95.7	70.8	63.1
16.	Nitrates as NO_3	4.6	5.5	5.4	5.0	5.8
17.	Fluoride as F	0.68	0.7	0.9	0.8	0.7
18.	Mercury as Hg	BDL	BDL	BDL	BDL	BDL
19	Cadmium as Cd	BDL	BDL	BDL	BDL	BDL
20.	Selenium as Se	BDL	BDL	BDL	BDL	BDL
21.	Arsenic as As	BDL	BDL	BDL	BDL	BDL
22.	Cynide as Cn	BDL	BDL	BDL	BDL	BDL
23.	Lead as Pb	BDL	BDL	BDL	BDL	BDL
24.	Zinc as Zn	BDL	BDL	BDL	BDL	BDL
25.	Chromium as Cr^{+6}	BDL	BDL	BDL	BDL	BDL
26.	Pesticides	Absent	Absent	Absent	Absent	Absent
27.	Alkalinity as $CaCO_3$	132	178	304	175	193
28.	Boran as B	0.06	0.1	0.1	0.1	0.1
29.	MPN of Coliform Count/100 ml	Nil	Nil	Nil	Nil	Nil

Note: All the values except pH, Taste, Odour, Colour & Turbidity are expressed in mg/L.

1. River Krishna 2. Jettipalem Village 3. Goli Vagu 4. Goli village 5. Samadhanampeta

7. POLLUTION CONTROL IN THE MINE

7.1 Pollution control measures

The Management has given top priority of pollution prevention and control. Adopting various pollution control measures stage wise operation controls the Air pollutants emitted into atmosphere.

7.2 Ambient Air Quality

Ambient air quality monitoring is carried out regularly at mines to know the status of the ambient air quality.

Ambient air quality is monitored for 24 hours at following locations Near Mines Office, Near Haulage Road, Crusher site, Drilling point, Jettipalem Village, for the estimation of PM_{10}, $PM_{2.5}$, SO_2, NOx and CO. Estimated average values for the parameters monitored is represented in the Table 4 the analyzed values for PM_{10},$PM_{2.5}$,SO_2, NOx and CO, are within limits prescribed by APPCB for industrial and mixed use.

Table 3
AVERAGE VALUES OF AMBIENT AIR QUALITY DATA

Parameter → Location ↓	**Particulate Matter (PM_{10}) ($\mu g/m^3$)**	**Particulate Matter ($PM_{2.5}$) ($\mu g/m^3$)**	**Sulphur dioxide ($\mu g/m^3$)**	**Oxides of Nitrogen ($\mu g/m^3$)**	**Carbon Monoxide ($\mu g/m^3$)**
1	56.99	25.68	14.51	19.05	719.9
2	70.07	28.30	16.13	20.96	716.08
3	67.19	25.9	15.37	20.25	718.16
4	70.66	25.58	16.40	20.82	704
5	68.91	27.8	16.08	21.31	741.9

Locations:
1. Near Mines Office
2. Near Haulage Road
3. Near Security gate
4. Near crushing area
5. Near Drilling Point

7.3 Waste water Sources and Monitoring

Wastewater from toilets is sent to septic tank followed by soak pit. Water used only dust suppression and wet drilling, no waste water is generated.

7.4 Noise Pollution

Noise pollution control measures are adopted at various stages of operation. Noise Levels are measured at various places in the mines by using a sound level meter the results are given in the table. 4

Table 4
Ambient Noise Levels

S No.	Location	Noise Levels in dB(A)	Noise Levels in dB(A)
		Day Time	Night Time
1	Near Mines Office	65.13	59.38
2	Near Drilling area	71.64	65.70
3	Near Haulage Road	66.27	62.49
4	Jettipalem village	52.17	41.95
5	Satrashala	51.54	39.41

Table - 5
GREENBELT DEVELOPMENT

DETAILS OF SPECIES FOR GREEN BELT DEVELOPMENT FOR THE YEAR 2019-20	
MINES LEASE AREA	
AREA IN ACRES	**3.95Acres**
NO. OF PLANTS	2295
NAME OF THE SPECIES	Kanuga, Dubai,Gulmohra
Survival rate (%)	80%
WATER SUPPLY	Drip system and Water Tanker
GRAND TOTAL	
AREA IN ACRES	**3.95Acres**
NO. OF PLANTS	**2295**

9. HOUSEKEEPING:

Proper cleaning of the different sections is required to maintain healthy environment, to avoid unnecessary loss of product in the form of dust emission and polluting surrounding environment. Water spraying is done inside the factory premises to control fugitive emissions from coal yard and raw material storage yards. Stores to be maintain properly. Factory premises are to be clean and green to have good housekeeping. M/s. PARASAKTI LIME STONE MINE is keeping their plant and premises neat tidy. Housekeeping has been found to be well.

10. CONCLUSIONS

There are no effluents like mine drainage etc. from the mine area. The water samples collected in and around mine area are meeting the standards as per IS: 10500 – 1991.

Ambient air quality data generated in core zone i.e., mining area and immediate surroundings are observed to be varying between the limits with mining operations. SO_2 and NOx concentrations are consistent during the whole day hence the SO_2 and NOx emissions due to mining operations are negligible in the area.

Ambient air quality data generated in buffer zone i.e., nearby areas with habitations around the mining area showed consistently very less concentrations for all the parameters analyzed hence there is no impact in the buffer zone due to the mining operations carried out. In a nutshell the mine operation is meeting the overall standards of the statutory authorities.

ANNEXURE – I (MINES)
MONTH WISE WATER CONSUMPTION FOR THE YEAR 2019-20

MONTH	Mines (KL)	Domestic (KL)	Total (KL)
April, 2019	**1242**	**238**	1480
May, 2019	**1333**	**244**	1577
June, 2019	**801**	**236**	1037
July, 2019	**742**	**246**	988
August, 2019	**715**	**254**	969
September, 2019	**695**	**246**	941
October, 2019	**755**	**263**	1018
November, 2020	**720**	**264**	984
December, 2020	**1016**	**272**	1288
January, 2020	**1729**	**276**	2005
February, 2020	**1707**	**258**	1965
March, 2020	**1323**	**262**	1585
TOTAL	**12778**	**3058**	**15836**

ANNEXURE – II (MINES)
LIMESTONE PRODUCTION AND CONSUMPTION FOR THE YEAR 2019-20

MONTH	PRODUCTION in MT	CONSUMPTION
April, 2019	108990	84324
May, 2019	61042	81090
June, 2019	103455	119248
July, 2019	82739	110195
August, 2019	70496	29315
September, 2019	56990	117639
October, 2019	40718	38519
November, 2020	27407	34962
December, 2020	118484	123801
January, 2020	129383	123577
February, 2020	124273	24696
March, 2020	44017	85719
TOTAL	967994	973085

Blasting material consumption for 2019-20		
Month	**Slurry (Kg.)**	**Ammonium Nitrate (Kg.)**
April, 2019	2175	9450
May, 2019	2150	6500
June, 2019	2925	9750
July, 2019	2625	6700
August, 2019	2750	5400
September, 2019	1900	4550
October, 2019	1450	3750
November, 2020	725	2700
December, 2020	3375	11550
January, 2020	3500	10200
February, 2020	2725	9400
March, 2020	1075	4000
TOTAL	**27375**	**83950**

EXPENDITURE ON POLLUTION CONTROL EQUIPMENT & MONITORING 2019-20

		Cost Rs	**TOTAL**
YEARLY MONITORING CHARGES		1,62,840	1,62,840
HORTICULTURE		67669	
PLANTATION		16,45,295	
TOTAL PLANTATION & HORTICULTURE			17,12,964
GRAND TOTAL			**18,75,804**
HAZARDOUS WASTE LUBE OIL (KL)	7.095KL		
GREASE (MT)	1.82MT		
Old Batteries (MT)	1.12MT		