Environmental Statement (Form-V)

Period: 2016-2017

of

Anjani Portland Cement Limited

Chintalapalem Village

Mallacheruvu Mandal, Nalgonda District

Prepared By

M/s Pragathi Labs & Consultants Pvt. Ltd.

(Recognized by MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

Plot No.B15 & 16, Behind pollution control Board,

Opp. Dena Bank, Sanath Nagar Hyderabad -500 018

1.0 INTRODUCTION

The concern for environment, both in the National and International arena, has increased manifold in the recent years. Sustainability of present manufacturing practices and rate of resource consumption and effects of economic progress on environment are debated. People are worried about the health hazards that are posed by degraded environment. In order to limit degradation, the Government, in line with its regulatory approach to environmental protection, has enacted a numerous saturates and rules.

2.0 ENVIRONMENTAL AUDIT

Environmental audit can be defined as a management tool comprising a systematic documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of helping to regulate the environment by facilitating management control of environmental practices, and assessing compliance with company policies, which would include meeting regulatory requirements. In essence, environmental audit is a process of detecting waste of resources and environmental damage that can be avoided in any productive activity.

When the procedure for environmental audit was first notified under the Environment Protection Act, 1986, by the Ministry of Environment and Forests (vide notification no. GSR 329(e) dt,. 13th March 1992), the industrial units were required to furnish environmental audit reports. By an amendment (vide notification No. GSR 386(e) dt. 22nd April 1993), the term for the document has been revised from "environmental audit report" to "Environmental Statement".

Environmental Statement has to be submitted by every person carrying over an industry, operation or process requiring consent under section 25 of the Water (Prevention and Control of Pollution) Act of 1974 or under section 21 of the Air (Prevention and Control of Pollution) Act of 1981 or both or authorization under Hazardous wastes (Management and Handling) Rules of 1989 issued under the Environment (protection) Act of 1986. The statement has to be submitted every year to the concerned State Pollution Control Board for the Period ending on 31st March in a prescribed form (Form V) by 30th September every year, beginning from 1993.

M/s. Anjani Portland Cements Ltd. has entrusted the job of preparing the Environmental Statement for their mine for the financial year 2016-2017 to M/s. Pragathi Labs and Consultants Pvt. Ltd., Hyderabad.

3.0 PROJECT LOCATION

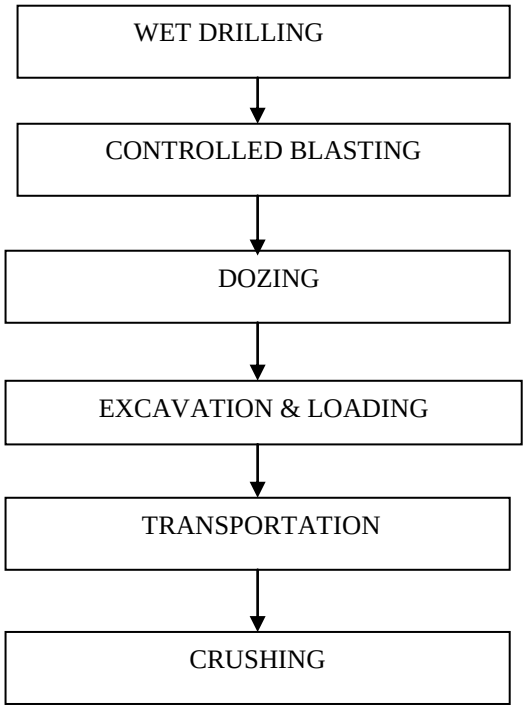
Anjani Lime Stone Mine -I of M/s Anjani Portland Cement Limited is located at Sy. No 24/1,373, 374 and 375 of Chintalapalem village & Mandal in Suryapet District of Telangana State (Longitude 79^{o}57'45" – 79^{o}58'00" E and 16^{o}45'30" – 16^{o}46'00" N Latitude) in the year 1999. It has the mining lease area over an extent of 57.52 hectares. Anjani Portland cement is an ISO: 9001, 14000 & 18000 are certified. Anjani Portland also got the awards for CSR during the year 2015. Dewatered Mine water is using for cultivating the lands.

Anjani Lime Stone Mine -III of M/s Anjani Portland Cement Limited is located at Sy.No 49/2 of Gudimalkapuram village, Mallacheruvu Mandal in Nalgonda District of Andhra Pradesh in the year 2008. It has mining lease area over an extent of 4.75 hectares.

4.0 Production Details

Product	Production (MT/annum)	
	2015-16	**2016-17**
Mine-I	840500	1020892.44
Mine-III	141500	79000.00
Total	**982000**	**1099892.44**

Mining Process



Open Cast works

Mechanized mining is in practice for the production rate of 1.65 MTPA limestone for cement plant.

1. Over burden dumps : Nil
2. Ore bench height : First bench height 6 to 6.5m it is in progress, Second bench height 6 m it is in progress, Third bench height 6 m it is in progress, Sump made in the fourth bench for Anjani Limestone Mine-I & . First bench height 4to 5m it is in progress, Second bench height 5 m it is in progress, for Anjani Limestone Mine-III
3. Ore bench width : Bench width maintained more than bench height i.e. + 15 to 20 m
4. General conditions of face : All benches are dressed properly to avoid loose boulders and bench slope is maintained at 10^{o} to 15^{o} inwardly.
5. Soil dumps : Soil dumps are used for greenbelt development

6. Bench floor : Bench floor is maintained tidy and clean with a gentle slope along the dip of the strata

5.0 Water consumption and Waste Water generation

The ground water is the chief source of water for the plant. The water quality is found good enough where there is no pretreatment is necessary. The water consumed and wastewater generation is as follows:

Source	Water consumption m^3/day	Waste water generation m^3/day
Sprinkling on haul road and much pile wetting	36.0	Nil
Wet Drilling	1.5	Nil
Domestic	1.0	Nil
Greenbelt development	3.5	Nil
Total	**42.0**	--

There is no waste water generated from the mine as there are no persons living in the mine site.

6.0 Pollution Control in the Mine

Air Pollution Control

In the open cast mine envisaged mining operations such as drilling, excavation, loading and unloading, movement of dumpers on haul roads are expected to generate particulate matter apart from that fugitive dust also cause for the air pollution due to vehicular movements.

Dust emission sources

Fugitive and Non-fugitive dust emissions during mining

No.	Source	Nature of emission	Frequency of emission	Nature of air pollution
1	Construction of infrastructural facilities (building, roads)	Fugitive and area source	Infrequent and pre-mining	Dust
2	Top soil stripping			
3	Drilling	Fugitive and point source		
4	Blasting	Fugitive and point source	Frequent and post-mining	Dust, CO, NO_2, SO_2
5	Excavation of ore	Fugitive and area source	Very frequent and post-mining	Dust
6	Waste rock dumping	Non-fugitive & point source	Very frequent and post-mining	Dust
7	Loading and unloading of ore			
8	Material transport	Fugitive and line source	Very frequent and post mining	Dust
9	Wind erosion	Fugitive and area source	Frequent and post mining	Dust
10	Stock piles	Fugitive and area	Frequent and post-	Dust

		source	mining	

Proposed Mitigation Measures

Air pollution can be controlled by Dust suppression system, dust extraction system and vehicular emissions will be controlled.

Dust Suppression System

Adequate water sprinkling arrangement would be provided to suppress the dust emissions from haul roads, mine working places, stock piles and other areas susceptible to dust emissions due to surface wind.

Vehicular Emission Control

Vehicular emissions are expected from diesel operated transported equipment. By avoiding idle running and over loading of the engine, in addition, the engines shall periodically serviced to ensure proper running and control of the vehicular emissions.

The roads, dump yard and other dust raising places will be sprinkled with water regularly especially in the summers. Afforestation will be taken up in a phased manner during the mine life. Avenue plantation will be under taken to avoid noise and dust pollution.

Activity	Expected Pollution	Control Measures Adopted
Drilling of holes for blasting purpose	Dust emissions while drilling	The Wagon Drill does drilling. (Wet Process) hence no dust during drilling activity is generated.
Blasting operation	Dust emissions while blasting	Blasting is done based on the air conditions. Sprinkling of water on the top layer before blasting to reduce the fine dust emissions.
Loading of truck in the mine area for transportation.	Dust emissions while loading the limestone	Sprinkling of water on the limestone before and while loading the trucks.
Transportation of limestone to Stock yard	Dust emissions from the truck in movement and dust emissions from the roads due to vehicle movement Emissions from the vehicle due to fuel combustion.	Sprinkling of water on the roads at regular intervals to arrest the dust particles. Regular maintenance of the vehicle for proper combustion and reduced emissions.
Stacking of the limestone	Dust entertainment due to the movement of vehicle of dust into the ambient air due to winds.	Movable windshields of 5m by 8m, which have to be kept to arrest the wind based in wind direction, are provided. The storage of the limestone has to be done in a proper way by constructing a retaining bund all round the storage area.
Loading and Transportation of limestone	Dust entertainment and spillage while loading and transportation of limestone.	Due care has been taken while loading the trucks so as to minimize the dust entering the air.

The existing status of Air Quality with respect to ambient and Dust emissions has been monitored and details are given in the below **Tables.**

Noise Pollution Control

Noise will be produced during operational phase of mining due to drilling, blasting, ore extractors, movement of trippers and other heavy machinery.

The noise generated by the mining activity is dissipated within the core zone. Since, the mining and allied activities will takes place only during day time. However, the increase in noise levels will not pose any major problem on surrounding villages.

Proposed Mitigation Measures

Regular maintenance of noise generating units and equipments will minimize the noise levels. The noise level will reduce and anticipated noise levels falls below the prescribed limits.

Well designed green belt which is planned around the noise sources, act as noise barriers, and regular maintenance of vehicles shall minimize the noise levels.

Providing proper noise proof enclosure with glycerin soaked cotton and earmuffs for the workers separated from the noise source and exhaust silencers for all mine transport equipment.

The existing noise levels are given in the below **Tables**

Water Pollution Control

The ground water quality of the bore-wells in buffer zone indicates the quality of water is within the drinking water standards (IS 10500). Mining and allied activities shall have direct impact on improvement of ground water potential. Due to the creation of mines as water storage bodies, there would be an increase in ground water potential due to infiltration and percolation.

Proposed Mitigation Measures

The mine as such would not produce any significant quantity of waste water on a continuous basis except nominal amount of sanitary and canteen waste. The treated water would be used for greenbelt development.

The existing water quality are given in the **Tables**

FORM V

ENVIRONMENTAL STATEMENT REPORT FOR THE FINANCIAL YEAR ENDING 31ST MARCH 2015

PART - A

1.	Name and address of			
	i)	Industry	:	Anjani Limestone Mine of M/s Anjani Portland Cement Limited Chintalapalem village & Mandal, Suryapet District, Telangana State.
	ii)	Owner	:	Sri N. Venkat Raju Sr. Vice President (works)
2.	Production Capacity		:	Mine-I - 1.67 MTPA Mine-III -0.15 MTPA
3.	Date of Last Environmental Audit Submitted		:	26th July, 2016

PART - B

I) PRODUCTION DETAILS

Product	Production (MT/annum)	
	2015-16	2016-17
Mine-I	840500	1020892.44
Mine-III	141500	79000.00
Total	**982000**	**1099892.44**

WATER CONSUMPTION

Description	Water Consumption (m^3/day)
Sprinkling on haul road and much pile wetting	36.0
Wet Drilling	1.5
Domestic	1.0
Greenbelt development	3.5
Total	**42.0**

Name of Product	Water consumption (KL/T)	
	During 2015-2016	During 2016-2017
Lime stone	0.000247	0.000277

PART – C

POLLUTION SOURCE & CONTROL

The major sources of air pollutants are dust from the mine and SO_2, NO_2 are from the vehicular movements. The monitoring details are given below

Table No. 1 Ambient Air Quality (Mine No. I)

MONTH: JUNE-2016

Location	Date of Monitoring	Concentration (μg/m^3)				CO mg/m^3
		PM_{10}	$PM_{2.5}$	SO_2	NO_2	
Near Mine office	06th June, 2016	64	31	9.0	12	0.8
Near Pump house	06th June, 2016	70	36	10	16	1.4
Near loading Area	06th June, 2016	79	44	12	19	1.2
Near school	06th June, 2016	54	27	8.5	11	0.6
Chintalapalem village	06th June, 2016	40	22	8.1	10	0.5

Table No. 2 Ambient Air Quality (Mine No. III)

MONTH: JUNE-2016

Location	Date of Monitoring	Concentration (μg/m^3)				CO mg/m^3
		PM_{10}	$PM_{2.5}$	SO_2	NO_2	
Near haul road	08th June, 2016	64	32	8.6	11.5	1.3
Near loading Area	08th June, 2016	70	36	10.6	15.1	1.7
Drilling Area	08th June, 2016	78	38	9.9	13.9	1.3
Near school	08th June, 2016	54	26	8.8	10.1	0.8
Anjani colony	08th June, 2016	60	32	10	13.8	1.1

Table No. 3 Water Quality Data

MONTH: JUNE-2016

Parameters	Units	Bore Water
Turbidity	NTU	3.4
pH	--	7.68
T. Hardness as $CaCO_3$	mg/L	190
Chlorides as Cl^-	mg/L	82
Total Dissolved Solids	mg/L	420
Calcium as Ca	mg/L	44
Magnesium as Mg	mg/L	19
Sulphates as SO_4	mg/L	20
Nitrate as NO_3	mg/L	3.6
Fluorides as F	mg/L	0.7
T. Alkalinity as $CaCO_3$	mg/L	186
Electrical Conductivity	μmhos/cm	646
Suspended Solids	mg/L	10
Calcium Hardness as $CaCO_3$	mg/L	110
Mg Hardness as $CaCO_3$	mg/L	80
Ph. Alkalinity as $CaCO_3$	mg/L	Nil
MO Alkalinity as $CaCO_3$	mg/L	186
Potassium as K	mg/L	3.0
Sodium as Na	mg/L	58

Silica	mg/L	3.5

Table No. 4 Mine Discharge Water

MONTH: JUNE-2016

Parameters	Units	Effluent
Colour	Hazen	5.3
Odour	--	Objectionable
Turbidity	NTU	8.03
pH	--	7.72
Electrical Conductivity	μmhos/cm	1096
Total Dissolved Solids	mg/L	714
Total suspended solids	mg/L	64
Chlorides as Cl^-	mg/L	132
Sulphates as SO_4^{2-}	mg/L	84
Nitrate Nitrogen as NO_3	mg/L	5.1
Fluorides as F	mg/L	1.1
Iron as Fe	mg/L	2.8
Calcium as Ca	mg/L	84
Magnesium as Mg	mg/L	29
T. Alkalinity as $CaCO_3$	mg/L	276
T. Hardness as $CaCO_3$	mg/L	330
Sodium as Na	mg/L	96
Potassium as K	mg/L	6.0
Dissolved Oxygen (DO)	mg/L	5.1
Chemical Oxygen Demand (COD)	mg/L	40
BOD at 27^0C (3 days)	mg/L	16
Oil & Grease	mg/L	2.1

Table No. 5 Ambient Air Quality (Free Silica)

MONTH: JUNE-2016

Parameters	Units	Results
Mine-I Drilling Area	%	0.48
Mine-III Drilling Area	%	0.52

Table No. 6 Ambient Air Quality (Dust Emissions)

MONTH: JUNE-2016

Parameters	Operator	Dust Conc. (mg/m^3)	Threshold limit (mg/m^3) as per DGMS
Haulage Road	Anji	1.341	3.00
Near Breaker Machine	Aadhi Reddy	1.476	3.00
Near Driller	Ravi	1.156	3.00
Mine Office	Nagaraju	0.798	3.00
Shovel	Venkat Rao	1.693	3.00

Table No. 7 Personal Noise Quality

MONTH: JUNE-2016

Parameters	Operator	Noise levels dB(A)
Haulage Road	Anji	57.8
Near Breaker Machine	Aadhi Reddy	70.1
Near Driller	Ravi	68.1
Mine Office	Nagaraju	55.2
Shovel	Venkat Rao	67.6

Table No. 8 Ambient Noise Quality

MONTH: JUNE 2016

Parameters	Noise levels dB(A)
1m distance from Haulage Road (Mine No. I)	56.3
1m distance from Driller (Mine No. I)	68.6
1m distance from Mine Office (Mine No. I)	53.1
1m distance from Shovel (Mine No. I)	64.6

Table No. 9 Ambient Air Quality (Mine No. I)

MONTH: SEPTEMBER 2016

Location	Date of Monitoring	Concentration (µg/m^3)				CO mg/m^3
		PM_{10}	$PM_{2.5}$	SO_2	NO_2	
Near Mine office	07th September, 16	53	28	6.0	10	0.6
Near Pump house	07th September, 16	62	33	8.0	13	1.1
Near loading Area	07th September, 16	69	41	9.0	15	1.0
Near school	07th September, 16	54	19	6.9	9.0	0.5
Chintalapalem village	07th September, 16	31	19	6.4	8.0	0.5

Table No. 10 Ambient Air Quality (Mine No. III)

MONTH: SEPTEMBER 2016

Location	Date of Monitoring	Concentration (µg/m^3)				CO mg/m^3
		PM_{10}	$PM_{2.5}$	SO_2	NO_2	
Near haul road	09th September, 16	56	28	6.9	9.7	1.1
Near loading area	09th September, 16	62	32	8.4	14.6	1.2
Drilling Area	09th September, 16	69	31	7.8	11.5	1.0
Near school	09th September, 16	47	22	6.6	9.3	0.6
Anjani colony	09th September, 16	53	27	8.0	11.2	0.9

Table No. 11 Water Quality Data

MONTH: SEPTEMBER 2016

Parameters	Units	Bore Water
Turbidity	NTU	3.6
pH	--	7.71
T. Hardness as $CaCO_3$	mg/L	217
Chlorides as Cl^-	mg/L	91
Total Dissolved Solids	mg/L	463
Calcium as Ca	mg/L	58
Magnesium as Mg	mg/L	17

Sulphates as SO_4	mg/L	26
Nitrate as NO_3	mg/L	3.9
Fluorides as F	mg/L	0.8
T. Alkalinity as $CaCO_3$	mg/L	197
Electrical Conductivity	µmhos/cm	712
Suspended Solids	mg/L	12
Calcium Hardness as $CaCO_3$	mg/L	149
Mg Hardness as $CaCO_3$	mg/L	68
Ph. Alkalinity as $CaCO_3$	mg/L	Nil
MO Alkalinity as $CaCO_3$	mg/L	197
Potassium as K	mg/L	3.5
Sodium as Na	mg/L	62
Silica as SiO_2	mg/L	3.7

Table No. 12 Mine Discharge Water

MONTH: SEPTEMBER 2016

Parameters	Units	Effluent
Colour	Hazen	5.5
Odour	--	Objectionable
Turbidity	NTU	8.08
pH	--	7.76
Electrical Conductivity	µmhos/cm	1146
Total Dissolved Solids	mg/l	745
Total suspended solids	mg/l	67
Chlorides as Cl^-	mg/l	141
Sulphates as SO_4^{2-}	mg/l	86
Nitrate Nitrigen	mg/l	5.4
Fluorides as F	mg/l	1.3
Iron as Fe	mg/l	3.1
Calcium as Ca	mg/l	91
Magnesium as Mg	mg/l	30
T. Alkalinity as $CaCO_3$	mg/l	281
T. Hardness as $CaCO_3$	mg/l	349
Sodium as Na	mg/l	98
Potassium as K	mg/l	6.5
Dissolved Oxygen (DO)	mg/l	5.4
Chemical Oxygen Demand (COD)	mg/l	46
BOD at 27^0C (3 days)	mg/l	17
Oil & Grease	mg/l	2.2

Table No. 13 Ambient Air Quality (Free Silica)

MONTH: SEPTEMBER 2016

Parameters	Units	Results
Mine-I Drilling Area	%	0.46
Mine-III Drilling Area	%	0.49

Table No. 14 Ambient Air Quality (Dust Emissions)

MONTH: SEPTEMBER 2016

Parameters	Operator	Dust Conc. (mg/m^3)	Threshold limit (mg/m^3) as per DGMS
Haulage Road	Anji	1.254	3.00
Near Breaker Machine	Aadhi Reddy	1.287	3.00
Near Driller	Ravi	1.013	3.00
Mine Office	Nagaraju	0.635	3.00
Shovel	Venkat Rao	1.476	3.00

Table No. 15 Personal Noise Quality

MONTH: SEPTEMBER 2016

Parameters	Operator	Noise levels dB (A)
Haulage Road	Anji	53.2
Near Breaker Machine	Aadhi Reddy	67.4
Near Driller	Ravi	65.7
Mine Office	Nagaraju	52.1
Shovel	Venkat Rao	64.3

Table No. 16 Ambient Noise Quality

MONTH: SEPTEMBER 2016

Parameters	Noise levels dB (A)
1m distance from Haulage Road (Mine No. I)	54.7
1m distance from Driller (Mine No. I)	66.4
1m distance from Mine Office (Mine No. I)	51.8
1m distance from Shovel (Mine No. I)	62.9

Table No. 17 Ambient Air Quality (Mine No. I)

MONTH: DECEMBER 2016

Location	Date of Monitoring	Concentration ($\mu g/m^3$)				CO mg/m^3
		PM_{10}	$PM_{2.5}$	SO_2	NO_2	
Near Mine office	01st December, 16	61	32	8.0	12	0.8
Near Pump house	01st December, 16	68	35	10	15	1.2
Near loading Area	01st December, 16	76	43	12	20	1.4
Near school	01st December, 16	50	25	6.3	8.0	0.3
Chintalapalem village	01st December, 16	41	25	6.8	9.1	0.7

Table No. 18 Ambient Air Quality (Mine No. III)

MONTH: DECEMBER 2016

Location	Date of Monitoring	Concentration (μg/m3)				CO mg/m^3
		PM_{10}	$PM_{2.5}$	SO_2	NO_2	
Near haul road	03rd December, 16	60	32	8.2	11.5	1.3
Near loading area	03rd December, 16	68	36	10.2	16.4	1.4
Drilling Area	03rd December, 16	72	35	9.6	13.8	1.2
Near school	03rd December, 16	48	24	7.8	11.2	0.4
Anjani colony	03rd December, 16	57	31	10	13.1	1.1

Table No. 19 Water Quality Data

MONTH: DECEMBER 2016

Parameters	Units	Bore Water
Turbidity	NTU	2.1
pH	--	7.52
T. Hardness as $CaCO_3$	mg/L	214
Chlorides as Cl^-	mg/L	89
Total Dissolved Solids	mg/L	452
Calcium as Ca	mg/L	57
Magnesium as Mg	mg/L	17
Sulphates as SO_4	mg/L	25
Nitrate as NO_3	mg/L	3.7
Fluorides as F	mg/L	0.7
T. Alkalinity as $CaCO_3$	mg/L	196
Electrical Conductivity	µmhos/cm	702
Suspended Solids	mg/L	10
Calcium Hardness as $CaCO_3$	mg/L	142
Mg Hardness as $CaCO_3$	mg/L	72
Ph. Alkalinity as $CaCO_3$	mg/L	Nil
MO Alkalinity as $CaCO_3$	mg/L	196
Potassium as K	mg/L	3.4
Sodium as Na	mg/L	61
Silica as SiO_2	mg/L	3.6

Table No. 20 Mine Discharge Water

MONTH: DECEMBER 2016

Parameters	Units	Effluent
Colour	Hazen	5.7
Odour	--	Objectionable
Turbidity	NTU	8.21
pH	--	7.8
Electrical Conductivity	µmhos/cm	1168
Total Dissolved Solids	mg/L	752
Total suspended solids	mg/L	64
Chlorides as Cl^-	mg/L	144
Sulphates as SO_4^{2-}	mg/L	87
Nitrate Nitrogen as NO_3	mg/L	4.8
Fluorides as F	mg/L	1.1
Iron as Fe	mg/L	2.9
Calcium as Ca	mg/L	94
Magnesium as Mg	mg/L	30
T. Alkalinity as $CaCO_3$	mg/L	286
T. Hardness as $CaCO_3$	mg/L	358
Sodium as Na	mg/L	99
Potassium as K	mg/L	6.6
Dissolved Oxygen (DO)	mg/L	5.2
Chemical Oxygen Demand (COD)	mg/L	48
BOD at 27^0C (3 days)	mg/L	16
Oil & Grease	mg/L	2.0

Table No. 21 Ambient Air Quality (Free Silica)

MONTH: DECEMBER 2016

Parameters	Units	Results
Mine-I Drilling Area	%	0.58
Mine-III Drilling Area	%	0.61

Table No. 22 Ambient Air Quality (Dust Emissions)

MONTH: DECEMBER 2016

Parameters	Operator	Dust Conc. (mg/m^3)	Threshold limit (mg/m^3) as per DGMS
Haulage Road	Anji	1.863	3.00
Near Breaker Machine	Aadhi Reddy	1.891	3.00
Near Driller	Ravi	1.214	3.00
Mine Office	Nagaraju	0.746	3.00
Shovel	Venkat Rao	1.967	3.00

Table No. 23 Personal Noise Quality

MONTH: DECEMBER 2016

Parameters	Operator	Noise levels dB (A)
Haulage Road	Anji	55
Near Breaker Machine	Aadhi Reddy	69
Near Driller	Ravi	67
Mine Office	Nagaraju	50
Shovel	Venkat Rao	66

Table No. 24 Ambient Noise Quality

MONTH: DECEMBER 2016

Parameters	Noise levels dB (A)
1 m Distance from Haulage Road (Mine No. I)	57
1 m Distance from Near Driller (Mine No. I)	68
1 m Distance from Mine Office (Mine No. I)	52
1 m Distance from Shovel (Mine No. I)	65

PART – D

HAZARDOUS WASTE

(As specified under Hazardous wastes/Management and handling) rules, 1989

Hazardous Wastes	Total Quantity (MT / Year)	
	During the previous Financial year 2015-2016	During the current financial year 2016-2017
--	Nil	Nil

PART – E

SOLID WASTE

	Total Quantity (Tons/ day)	
	During the previous financial year 2015-2016	During the current financial year 2016-2017
(a) From Process	Nil	Nil
(b) From Pollution Control Facility	Nil	Nil
(c) Quantity recycled or re-utilized	Nil	Nil

PART – F

CHARACTERISTICS OF HAZARDOUS, SOLID WASTES & MODE OF DISPOSAL

There is no hazardous and solid waste generated from the mine.

PART – G

IMPACT OF POLLUTION CONTROL MEASURES ON CONSERVATION OF NATURAL RESOURCES AND CONSEQUENTLY ON THE COST OF PRODUCTION

Adequate measures taken to construct Check dams to maintain clear environment in and around the mine premises. There is a minimum impact on the surrounding environment. Cost of mining activity is slightly increased due to the pollution control measures**.**

PART – H

MISCELLANEOUS:

The presence of the massive green belt in the township and also in the surroundings is helping as control of pollutants and improved the quality of Ambient Air.

- **Details of Plantations:**

Total area covered	:	13.52 Ha
No. of plants planted	:	10,280 Nos.
Total amount spent (towards the Cost of plants)	:	Rs.10,06,560/- per year for maintaining clean Environment & Green belt purpose

- **Accident Details**

  No major accidents occurred during the reporting period. All the minor accidents are attended by the first-aid at the site only. There is no fatal accident during the financial year 2015-2016

- **Auditor Comments**:

  The production level found to be significantly increased in this financial year as compared to the previous year. The water consumption has been increased when computing the unit water requirement it is comparatively high in contrast to previous year.

  The management shall follow all the post project management precautions as mentioned in the EIA report. They are advised to produce monthly monitoring data for stacks, ambient air quality, noise, wastewater and water from only recognized laboratories from Ministry of Environment and Forests, Govt. of India.

APPENDIX

APPENDIX-A

MINSTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 16th November, 2009

National Ambient Air Quality Standards

G.S.R. 826 (E) In exercise of the powers conferred by section 6 and section 25 of the Environment (protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. (1) These rules may be called the Environment (protection) seventh Amendment Rule 2009.
   (2) They shall come into force on the date of their publication in the Official Gazette

2. In the Environment (Protection) Rules, 1986 (hereinafter referred to as the said rules), in rule 3, in sub-rule (3B), for the words, brackets, figures and letters, "In columns (3) to (5) of Schedule VII" the words, brackets figures and letters " in columns (4) and (5) of schedule VII" shall be substituted.

3. For Schedule VII to the said rules and entries relating there to, the following Schedule and entries shall be substituted, namely:-

S.No.	Pollutants	Time weighted average	Concentration in Ambient Air		Method of Measurement
			Industrial Resi. Rural & Other areas	Ecological Sensitive Area (Notified By Central Govt.)	
1	Sulphur Dioxide (SO_2)	Annual Average *	50 μg/m^3	20 μg/m^3	1. Improved West and Geakemethod
		24 hours**	80 μg/m^3	80 μg/m^3	2. Ultraviolet fluorescence
2	Oxides of Nitrogen (NO_2)	Annual Average *	40 μg/m^3	30 μg/m^3	1. Jacob & Hochheiser modified (Na - Arsenite) Method
		24 hours*	80 μg/m^3	80 μg/m^3	2. Gas Phase Chemiluminescence
3	Particulate Matter (size > 10 μm) (PM_{10})	Annual Average *	60 μg/m^3	60μg/m^3	1. Gravimetric 2. TOEM 3. Beta Attenuation
		24 hours**	100 μg/m^3	100 μg/m^3	
4	Particulate Matter (size > 2.5 μm) ($PM_{2.5}$)	Annual Average *	40 μg/m^3	40 μg/m^3	1. Gravimetric 2. TOEM 3. Beta Attenuation
		24 hours**	60 μg/m^3	60 μg/m^3	
5	Carbon Monoxide (CO) mg/m^3	8 hours**	2.0 mg/m^3	2.0 mg/m^3	Non dispersive infrared spectroscopy
		1 hour**	4.0 mg/m^3	4.0 mg/m^3	

* Annual arithmetic mean of minimum of 104 measurements in a year taken twice a week 24 hourly at uniform interval

** 24 hourly / 8 hourly or 1 hourly values, as applicable, shall be complied with 98 % of the time in a year. 2 % of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note:

1. Whenever and wherever monitoring results on two consecutive days of monitoring exceed limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

Appendix-B

Ambient Air quality standards with respect to noise

G.S.R. 158 (E) dt. 09-03-2009
The Environment (Protection) Rule, 1986 (See rule 3)

Area Code	Category of Area	Limits in dB(A) Leq	
		Day Time	*Night Time*
A	*Industrial Area*	*75*	*70*
B	*Commercial Area*	*65*	*55*
C	*Residential Area*	*55*	*45*
D	*Silence Zone*	*50*	*40*

Note:

1. Day Time is recorded in between 6 a.m. and 9 p.m.

2. Night time is recorded in between 9 p.m. to 6 a.m.

3. Silence zone is defined as areas upto 100 meters around such premises as hospitals, educational institutions and courts. The silence zones are to be declared by the Competent Authority.

Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.

4. Mixed categories of areas should be declared as one of the four above mentioned categories by the Competent Authority and the corresponding standards

Appendix- C

India Standard-Drinking water –Specification- IS 10500:1991
Bureau of India Standards (BIS)

(Second Revision)
IS 10500: 2012

S. No.	Substance or Characteristic	Requirement (Desirable Limit)	Undesirable Effect outside the Desirable Limit	Permissible Limit in the Absence of Alternate Source	Methods of Test (Ref to IS)	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**
Essential Characteristics						
i	*Color, Hazen units, Max*	*5*	*Above 5, consumer acceptance decreases*	*15*	*3025 (Part 4) : 1983*	*Extended to 25 only if toxic substances are not suspected, in absence of alternate sources*
ii	*Odor*	*Unobjectionable*	*Agreeable*	*Agreeable*	*3025 (Part 5) : 1983*	*a. Test cold and when heated* *b. Test at several dilutions*
iii	*Taste*	*Agreeable*	*Agreeable*	*Agreeable*	*3025 (Parts 7 & 8) : 1984*	*Test to be conducted only after safety has been established*
iv	*Turbidity, NTU, Max*	*5*	*Above 1 consumer acceptance decreases*	*10*	*3025 (Part 10) : 1984*	-
v	*pH value*	*6.5 to 8.5*	*Beyond this range the water will affect the mucous membrane and / or water supply system*	*No relaxation*	*3025 (Part 11) : 1984*	-
vi	*Total hardness (as $CaCO_3$)*	*200*	*Encrustation in water supply*	*600*	*3025 (Part 21) : 1983*	-

	mg/l, Max		*structure and adverse effects on domestic use*			
vii	*Iron (as Fe) mg/l, Max*	*0.3*	*Beyond this limit taste/ appearance are affected, has adverse effect on domestic uses and water supply structures, and promotes iron bacteria*	*0.3*	*32 of 3025 : 1964*	*-*
viii	*Chlorides (as Cl) mg/l Max*	*250*	*Beyond this limit, taste, corrosion and palatability are affected*	*1000*	*3025 (Part 32) : 1988*	*-*
ix	*Residual, free chlorine, mg/l in*	*0.2*	*-*	*1*	*3025 (Part 26) : 1986*	*To be applicable only when water is chlorinated. Tested at consumer end. When protection against viral infection is required, it should be Min 0.5 mg/l.*
x	*Fluoride (as F), mg/l Max*	*1.0*	*Fluoride may be kept as low as possible. High fluoride may cause fluorosis*	*1.5*	*23 of 3025 : 1964*	*-*
Desirable Characteristics						
xi	*Dissolved solids mg/l Max*	*500*	*Beyond this palatability decreases and may cause gastro intestinal irritation*	*2000*	*3025 (Part 16) : 1984*	*-*
xii	*Calcium (as Ca), mg/l Max*	*75*	*Encrustation in water supply structure and adverse effects on domestic use*	*200*	*3025 (Part 40) : 1991*	*-*

xiii	*Magnesium (as Mg), mg/l Max*	*30*	*Encrustation to water supply structure and adverse effects on domestic use*	*100*	*16, 33, 34 of IS 3025 : 1964*	-
xiv	*Copper (as Cu), mg/l Max*	*0.05*	*Astringent taste, discoloration and corrosion of pipes, fitting and utensils will be caused beyond this.*	*1.5*	*36 of 3025 : 1964*	-
xv	*Manganese (as Mn) mg/l Max*	*0.1*	*Beyond this limit taste/ appearance are affected, has adverse effect on domestic uses and water supply structures*	*0.3*	*35 of 3025 : 1964*	-
xvi	*Sulphate (as SO_4) mg/l Max*	*200*	*Beyond this causes gastro intestinal irritation when magnesium or sodium are present.*	*400 (see col 7)*	*3025 (Part 24) : 1986*	*May be extended up to 400 provided (as Mg) does not exceed 30*
xvii	*Nitrate (as NO_2), mg/l Max*	*45*	*Beyond this methaemoglobine mia takes place*	*No relaxation*	*3025 (Part 34) : 1988*	-
xviii	*Phenolic compounds (as C_6H_5OH) mg/l Max*	*0.001*	*Beyond this, it may cause objectionable taste and odor*	*0.002*	*54 of 3025 : 1964*	-
xix	*Mercury (as Hg) mg/l Max*	*0.001*	*Beyond this, the water becomes toxic*	*No relaxation*	*(see Note) Mercury ion analyzer*	*To be tested when pollution is suspected*
xx	*Cadmium (as Cd), mg/l Max*	*0.003*	*Beyond this, the water becomes toxic*	*No relaxation*	*(See Note)*	*To be tested when pollution is suspected*

xxi	*Selenium (as Se), mg/l Max*	*0.01*	*Beyond this, the water becomes toxic*	*No relaxation*	*28 of 3025 : 1964*	*To be tested when pollution is suspected*
xxii	*Arsenic (as As), mg/l Max*	*0.01*	*Beyond this, the water becomes toxic*	*0.05*	*3025 (Part 37) : 1988*	*To be tested when pollution is suspected*
xxiii	*Cyanide (as CN), mg/l Max*	*0.05*	*Beyond this limit, the water becomes toxic*	*No relaxation*	*3025 (Part 27) : 1986*	*To be tested when pollution is suspected*
xxiv	*Lead (as Pb), mg/l Max*	*0.01*	*Beyond this limit, the water becomes toxic*	*No relaxation*	*(see Note)*	*To be tested when pollution is suspected*
xxv	*Zinc (as Zn) mg/l Max*	*5*	*Beyond this limit it can cause astringent taste and anopalescence in water.*	*15*	*39 of 3025 : 1964*	*To be tested when pollution is suspected*
xxvi	*Anionic detergents (as MBAS) mg/l Max*	*0.2*	*Beyond this limit it can cause a light froth in water*	*1.0*	*Methyleneblue extraction method*	*To be tested when pollution is suspected*
xxvii	*Chromium (as Cr^{6+}) mg/l Max*	*0.05*	*May be carcinogenic above this limit*	*No relaxation*	*38 of 3025 : 1964*	*To be tested when pollution is suspected*
xxviii	*Polynuclear aromatic hydrocarbons (as PAH)mg/l*	*0.0001*	*May be carcinogenic*	*-*	*-*	*-*
xxix	*Mineral oil mg/l Max*	*0.5*	*Beyond this limit undesirable taste and odor after chlorination take place*	*No relaxation*	*Gas chromatograph ic method*	*To be tested when pollution is suspected*
xxx	*Pesticides ug/l Max (18 pesticides)*	*415*	*Toxic*	*-*	*-*	*-*

xxxi	*Radioactive materials* *a. Alpha emitters Bq/l, Max* *b. Beta emitters pci/l, Max*	*0.1* *1*	- -	*No relaxation* *No relaxation*	*58 of 3025 : 1964* - -	-
xxxii	*Alkalinity mg/l Max*	*200*	*Beyond this limit taste becomes unpleasant*	*600*	*13 of 3025 : 1964*	-
xxxiii	*Aluminum (as Al) mg/l Max*	*0.03*	*Cumulative effect is reported to cause dementia*	*0.2*	*31 of 3025 : 1964*	-
xxxiv	*Boron (as Bo) mg/l Max*	*0.5*	-	*1.0*	*29 of 3025 : 1964*	-

Note: Atomic absorption spectrophotometric method may be used.