JK Cement WORKS
MUDDAPUR
(Unit : J.K. Cement Ltd)
CIN : L17229UP1994PLC017199

Phone : +91-8350-289000
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E-mail : factory.muddapur@jkcement.com

Works : P.O. Muddapur - 587 122
Dist. Bagalkot (Karnataka) India

No. - JKCW/ENV./CFO (MINE)/78/01 **Date: 19-09-2018**

To,
The Member Secretary
Karnataka State Pollution Control Board,
"Parisar Bhavan" 4th & 5th Floor,
49, Church Street, BANGALORE- 560 001

Subject- **Environmental Statement Report of Muddapur Limestone Mine, Village- Muddapur, Dist.- Bagalkot (Karnataka) for the financial year April-2017 to March-2018**

Reference- Combined Consent Order No. AW-306116 dated 08-05-2018

Dear Sir

As per 14 of Environment (Protection) Rule 1986, please find herewith enclosed Environmental Statement Report for Muddapur Limestone Mine, Village- Muddapur, Dist.- Bagalkot (Karnataka) in **Form V for the financial year 2017-2018** for your kind information and record, please.

Thanking you,

Yours faithfully,
Muddapur Limestone Mine
(Unit-JK Cement Ltd.)

R.B.M. Tripathi
(Unit Head)

Encl:

1- Duly filled Form-V as Environmental Statement Report of Muddapur Limestone Mine
2- Core zone and Buffer zone water testing report as Annexure-1
3- Ambient Air Quality Monitoring report of Muddapur Limestone Mine as per Annexure-2
4- Fugitive emission report of Muddapur Limestone Mine as per Annexure-3
5- Noise Monitoring report of Muddapur Limestone Mine, Muddapur as per Annexure-4

CC:

1- The Addl. Principle Chief Conservator of Forest (C), Ministry of Environment & Forests, Regional Office (South Zone), Bangalore- 560034
2- Scientist 'E' & In-charge, Central Pollution Control Board, 1st & 2nd Floors, Nisarga Bhavan, A-Block, Thimmaiah Main Road, 7th D Cross, Shivanagar, Bengaluru –560 079
3- Environment Officer, Karnataka State Pollution Control Board, Bagalkot- 587 102

FORM – V

ENVIRONMENTAL STATEMENT REPORT FOR THE FINANCIAL YEAR 2017-18

M/s Muddapur Lime Stone Mine (Unit: J. K. Cement Limited)

PART – A

(I)	Name & Address of the Owner / Occupier of the Industry Operation or Process	R. B. M. Tripathi (Unit Head) Muddapur Lime Stone Mine (Unit: J. K. Cement Limited) Muddapur, Bagalkot (Karnataka)
(II)	Industry Category Primary (STC CODE) Secondary (SIC CODE)	Red Category
(III)	Production Capacity	2.0 MTPA
(IV)	Year of Establishment	Year 2008
(V)	Date of last Environmental Statement Submitted	09-09-2017

PART – B

Water & Raw Material Consumption and Lime stone production

A. Water

Over All Consumption

(i) Process (Dust Suppression) - 8114 KL

(ii) Cooling - NA

(iii) Domestic - 115.2 KL

Consumption per unit of production

Name of the Product	Process Water Consumption per unit of Product Output (KL/MT of Limestone)	
	During the Previous Financial Year (2016-17)	During the Current Financial Year (2017-18)
Lime Stone	0.02291	0.01514

A. Raw Material Consumption

B. Name of the C. Raw Material	Name of Product	Consumption of Raw Material per Unit Product Output (KL/MT of Limestone)	
		During the Previous Financial Year (2016-17)	During the Current Financial Year (2017-18)
Diesel	Limestone	0.00074	0.00111

D. Total Lime Stone Production (in Ton)

During the Previous Financial Year (2016-17)	During the Current Financial Year (2017-18)
612558.57	532105

E. Total Power consumption (KWH/ MT of Limestone)

During the Previous Financial Year (2016-17)	During the Current Financial Year (2017-18)
0.11274	0.15479

PART - C

Pollutant Discharged To Environment / Unit of Output

(Parameters as specified in the consent issued)

S. No.	Pollutants	Quantity of Pollutants Discharged (Mass / day) (tonne/day)	Concentrations of Pollutants in discharged (Mass / Volume) (kg/m^3)	Percentage of variation from prescribed standard with reasons
(a)	Water	Waste water generated from the office toilets is discharged into soak pit via septic tank. There is no waste water in the mine. Mine's pit water is used for dust suppression in mine. Pit water testing report is as per **Annexure-1**		
(b)	Air	There is no point source emission in mine. Ambient air quality and fugitive emission monitoring report as **Annexure- 2 & 3**		

PART – D

(As specified under Hazardous waste / Management and Handling rules, 1989 as Amended -2008)

Hazardous waste		During the Previous Financial Year (2016-17)	During the Current Financial Year (2017-18)
(a) From Process	N.A.		
(b) From Pollution Control Facilities	N.A.		

PART – E

Solid Wastes

Solid Waste		Total Quantity	
		During the Previous Financial Year (2016-17)	During the Current Financial Year (2017-18)
(a)	From Process	N.A.	
(b)	From Pollution Control facilities	N.A.	
(c)	(i) Qty. recycled or reused Within the unit.	N.A.	
	(ii) Sold	N.A.	
	(iii) Disposed: During the mining of limestone disposed of overburden (In MT)	00.0 MT	00.0 MT

PART – F

PLEASE SPECIFY THE CHARACTERISATIONS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS SOLID WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THE CATEGORIES OF WASTES.

Hazardous waste: No hazardous waste is generated from mines.

Solid waste: Solid waste from the mine is overburden and it is dumped in predetermined dumping area. The total overburden generated from the April-2017 to March-2018 was 00.0 (NIL) MT.

PART – G

IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION.

AIR

There is no impact observed on vegetation & water bodies in the surrounding areas due to dust, as it will be suppressed at its generating sources.

The following measures are taken to suppress the dust at the source as well as to prevent the same, spreading in the atmosphere:

1- Wet drilling system is provided on all drill machines.
2- Regular water sprinkling on haul road during operation.
3- Optimize blasting parameters for proper fragmentation to reduce dust generation.
4- Plantation and development of Green Belt along the Haul Roads and Working Pits.

WATER

1- Being Mechanized Limestone mine, it requires water mainly for Wet Drilling, Road Spraying and Green Belt Development. The source of water is the accumulated rainwater in the lower most benches. At Muddapur Mine, there is no discharged of liquid effluent / waste water from the Mine.
2- No discharge of rain water or waste water from the mine to outside lease area. Rain water in the catchment area of mine lease is diverted through drainage in to lower level area of mine and that water is used for dust suppression and plantation purpose.

NOISE

Noise is generated in the mine due to following mining activities:

1- Excavation, drilling, blasting and operations of HEMM.
2- Transportation and handling of material.

The results of base line noise level survey are well below the permissible limit except near machinery while operating. The noise generating sources are scattered within the whole mining area. All the sources will not generate the noise simultaneously hence; the noise level would not alter the noise environment significantly. The noise level reduces with increase in distance from the source.

The following measures are taken to reduce the noise level at the source as well as to prevent the same, spreading in the atmosphere:

1- Providing enclosures for noise sources to reduce dispersion of noise like cabin in HEMM.
2- Proper maintenance and lubrication of machinery rotating parts.
3- Use electric delay detonator on surface in place of detonating fuse.
4- By covering the detonating fuse as well as detonators under drill cutting or the fine material.
5- By providing earmuffs and earplugs to eligible miners.
6- Use of Air Decking & sufficient column stemming in the blast holes.

PART – H

ADDITONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT POLLUTION, PREVENTION OF POLLUTION.

Green belt development and tree plantation is our ongoing process. Plantation has been done on OB sites, road sides and on other parts of non mineralized ML area. The top layer of the dump material and slopes is covered with top soil which is excellent property of water retention that supports good tree growth. Plantation details are following:

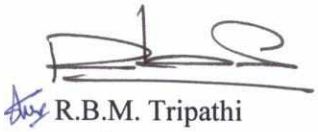
Year	No. of trees planted
Upto march, 2010	9831
2010-2011	3703
2011-2012	3225
2012-2013	Within lease- 2860
2013-2014	Within lease- 2264
2014-2015	Within lease- 342
2015-2016	1150
2016-2017	Within lease- 863 Outside lease- 158
2017-2018	Within lease- 865 Outside lease- 00

PART – I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT.

1- Regular water spraying is being done on haulage road and near loading places for effective dust suppression.
2- Thick plantation in and around the mine is being done.
3- Regular and proper maintenance of noise generating machinery including the transport vehicles is being done to maintain noise levels.
4- Air quality is being regularly monitored.
5- Delay detonators and shock tube initiation system is being used for blasting so as to reduce vibration and dust.
6- Sharp drill holes and drills with water flushing systems are being used to reduce dust generation.
7- We are providing all personal protective equipment (PPEs) to all mine employees i.e. dust mask (respirator), ear plug & ear muff, eye goggle etc. concern to them as additional measures of Air & Noise Pollution Control.
8- We are having full flash environmental laboratory for the monitoring of ambient air quality, water testing, noise monitoring etc.
9- Industry has been certified for standards ISO 9001: 2008, ISO 14001: 2004 and OHSAS 18001.

For Muddapur Lime Stone Mine, Muddapur (Karnataka)
(Unit: J.K. Cement Limited)



R.B.M. Tripathi
(Unit Head)

Annexure-1

MUDDAPUR LIMESTONE MINE, (KARNATAKA)

(Unit: J.K. Cement Ltd.)

Core Zone and Buffer Zone drinking water quality analysis report for the period from April-2017 to March-2018

Sl. No.	Constituents	Desirable Limit	TEST REPORT								
			Core Zone		Buffer Zone						
			Muddapur mines pit	Muddapur Mines	Muddapur	Petlur	Metgud	Ningapur	Bamanbudini	Halki	Thimmapur
1	Odour	**Aggreable**	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable
2	Taste	**Aggreable**	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable	Aggreable
3	Total Dissolved Solids	**500**	149.79	145.98	145.98	143.80	140.17	146.99	145.12	141.15	141.06
4	Turbidity	**5 NTU**	1.6	1.5	1.5	1.5	1.6	1.5	1.4	1.5	1.4
5	pH	**6.5-8.5**	7.3	7.5	7.5	7.6	7.4	7.5	7.4	7.5	7.2
6	Total Hardness	**300**	161.7	157.6	157.6	152.3	153.9	147.7	155.8	146.7	140.4
7	Calcium	**75**	28.44	30.12	30.12	29.57	33.98	31.88	27.80	29.71	31.05
8	Magnecium	**30**	13.48	12.38	12.38	12.64	13.06	13.66	13.05	13.18	12.83
9	Alkanity	**200**	106.6	112.8	112.8	124.0	119.4	119.2	116.8	118.1	115.1
10	Chloride	**250**	161.82	156.61	156.61	156.48	155.96	154.35	154.18	157.43	155.88

Note: 1- The Above analysis have been carried out as per IS-10500.

2- Obeserved Concentration in mg/liter except pH and Turbidity.

MUDDAPUR LIMESTONE MINES, (KARNATAKA)

(Unit: JK Cement Ltd.)

AAQM REPORT FOR THE PERIOD FROM APRIL-2017 TO MARCH-2018

(ALL VALUES IN MICROGRAMS / CUBIC METER)

Month	Sl. No.	Date	Week	SO_2				NO_2				PM_{10}				SPM			
				Locations				Locations				Locations				Locations			
				A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
APRIL	1	5.4.2017	1st	7.2	7.3	7.3	7.3	8.6	8.2	8.3	8.4	58.4	57.5	58.4	59.0	159.2	158.2	159.3	158.5
	2	7.4.2017		7.5	7.4	6.8	6.8	7.2	8.4	7.2	7.5	58.8	58.9	57.1	59.8	160.3	159.7	157.8	159.3
	3	11.4.2017	2nd	6.4	6.5	7.4	7.5	8.5	7.5	7.6	8.5	56.1	57.3	59.6	57.9	157.0	157.5	160.5	160.3
	4	14.4.2017		7.6	7.8	7.2	6.7	7.4	7.1	7.5	7.5	60.9	57.2	56.5	60.2	161.1	157.6	158.3	158.8
	5	17.4.2017	3rd	6.7	7.4	6.5	7.1	7.8	8.1	7.6	8.3	57.7	59.4	56.9	59.3	158.2	159.5	158.0	160.5
	6	21.4.2017		7.5	6.4	7.4	6.4	8.1	7.6	8.4	7.4	56.4	58.9	58.4	58.3	158.3	159.5	159.8	159.9
	7	24.4.2017	4th	6.8	6.7	6.7	7.3	7.5	7.4	7.5	8.2	57.8	57.3	56.3	58.3	158.1	159.3	157.0	159.8
	8	26.4.2017		6.7	6.8	7.4	7.2	7.3	7.5	8.3	7.8	57.4	57.7	57.7	58.3	157.8	158.0	158.9	160.0
	9	28.4.2017		7.6	7.2	6.8	7.6	7.5	7.6	7.9	8.1	57.9	57.2	56.8	58.2	159.0	157.4	158.2	159.7
MAY	1	3.5.2017	1st	7.5	6.5	6.5	6.7	8.5	7.5	7.5	7.8	56.6	57.2	58.4	56.8	157.5	158.0	159.3	157.3
	2	6.5.2017		6.0	7.5	7.0	5.8	7.8	8.5	8.2	7.5	57.8	57.7	57.9	56.9	159.8	159.5	159.1	158.6
	3	10.5.2017	2nd	6.5	7.5	6.8	7.0	7.0	8.8	7.5	8.2	58.5	57.7	57.2	58.5	158.9	158.8	158.3	158.9
	4	13.5.2017		7.3	6.8	7.2	6.8	8.2	7.5	8.5	7.8	59.2	61.0	56.9	58.9	161.4	162.6	158.2	161.1
	5	17.5.2017	3rd	6.5	7.2	6.3	7.2	7.5	8.0	7.8	8.0	62.3	63.8	57.3	57.9	164.1	164.3	160.0	159.3
	6	20.5.2017		6.7	6.7	7.0	7.0	7.5	7.5	8.0	8.5	61.5	62.3	56.5	59.7	162.0	161.8	158.0	164.0
	7	24.5.2017	4th	5.8	6.0	7.5	7.5	6.7	7.5	8.2	8.5	62.8	63.5	55.7	58.7	165.5	159.9	156.7	160.6
	8	27.5.2017		6.5	6.3	7.5	5.8	7.5	7.5	8.2	7.8	61.7	62.7	58.0	59.9	163.1	159.7	160.2	160.2
	9	31.5.2017		5.5	7.5	5.5	5.5	6.5	8.5	7.5	7.5	64.1	59.8	57.3	57.4	168.3	156.0	158.6	159.4
JUNE	1	3.6.2017	1st	7.5	7.5	7.5	7.5	8.3	8.5	8.5	8.3	61.2	64.9	57.5	57.8	171.1	170.5	168.1	165.9
	2	7.6.2017		6.5	7.0	6.5	6.5	7.8	8.5	7.3	7.5	58.2	56.4	61.2	61.7	164.9	164.6	168.6	169.3
	3	10.6.2017	2nd	7.5	6.7	7.0	7.5	8.5	8.3	8.5	8.5	61.3	58.9	63.9	67.9	169.7	164.9	172.1	173.8
	4	14.6.2017		6.5	6.5	6.5	6.5	7.5	8.0	7.5	7.5	60.8	61.6	56.2	58.8	168.2	169.6	164.6	164.6
	5	17.6.2017	3rd	7.0	6.8	6.7	8.2	8.5	7.8	7.3	9.7	41.9	51.9	34.9	42.3	154.0	157.7	142.5	154.1
	6	21.6.2017		8.5	8.3	7.5	7.5	9.5	10.2	9.2	9.2	57.2	59.3	45.9	58.7	162.3	165.3	154.8	163.9
	7	24.6.2017		6.5	8.2	7.3	8.2	9.2	9.5	8.0	10.5	52.4	53.5	59.5	47.2	157.5	164.1	165.2	154.9
	8	28.6.2017	4th	7.5	6.0	6.8	7.3	9.5	7.3	9.5	8.5	57.6	62.1	60.4	50.6	162.5	167.4	167.1	157.5
JULY	1	3.7.2017	1st	7.5	6.5	7.5	7.5	9.5	7.7	8.3	8.5	70.7	58.4	60.8	60.7	179.1	164.0	156.4	171.4
	2	6.7.2017		5.2	7.0	6.5	6.5	6.8	8.5	7.5	7.5	30.4	58.9	69.2	66.3	141.0	167.7	175.2	167.2
	3	10.7.2017	2nd	6.8	7.5	7.5	5.8	8.3	9.5	8.5	6.5	67.5	67.3	71.9	58.0	172.1	171.4	182.8	160.3
	4	13.7.2017		6.5	7.5	6.5	6.2	7.5	8.3	8.0	7.5	41.3	41.5	28.1	48.4	146.9	146.8	131.2	160.0
	5	17.7.2017	3rd	5.5	8.2	6.8	5.7	7.5	9.5	8.2	6.5	46.7	57.4	46.5	51.2	158.5	160.3	153.2	159.5
	6	20.7.2017		6.5	7.5	7.5	6.5	8.5	8.5	9.3	7.8	54.0	48.3	53.2	41.2	164.9	152.2	160.4	146.5
	7	24.7.2017	4th	7.3	6.8	7.5	6.5	8.5	8.2	9.5	9.5	55.3	59.8	48.7	52.9	163.3	163.5	153.9	158.4
	8	27.7.2017		6.5	7.0	5.8	7.0	8.5	9.5	7.3	6.7	50.7	56.8	49.5	49.9	156.7	160.1	154.6	155.6
	9	31.7.2017		4.5	5.5	5.0	5.5	5.5	7.5	7.0	6.5	42.2	51.0	54.7	45.9	148.0	155.9	160.0	149.7
AUGUST	1	3.8.2017	1st	7.7	6.8	6.8	6.5	13.3	7.5	7.2	7.5	61.8	46.9	52.1	58.1	167.7	152.7	157.1	164.2
	2	7.8.2017		7.7	6.5	6.0	5.8	15.8	7.2	7.2	6.5	56.7	55.4	59.9	52.3	166.4	160.1	163.1	160.7
	3	10.8.2017	2nd	7.2	5.8	6.2	6.0	15.8	6.2	7.5	7.2	63.3	59.5	60.8	62.4	169.3	164.1	167.3	169.2
	4	14.8.2017		7.2	5.5	5.8	6.2	15.0	6.2	6.5	7.8	61.3	63.8	56.1	55.1	166.2	169.7	163.6	160.3
	5	17.8.2017	3rd	7.8	6.2	6.7	6.7	12.7	7.2	7.5	7.5	58.3	53.7	50.9	48.4	162.6	160.7	159.5	155.6
	6	21.8.2017		7.0	6.5	6.0	5.8	15.5	7.5	7.0	6.7	60.2	56.7	59.0	54.7	167.9	159.2	161.3	158.6
	7	24.8.2017	4th	6.5	5.7	6.3	6.3	14.0	6.3	7.5	7.0	47.2	51.6	56.0	58.3	148.9	158.0	158.0	162.5
	8	28.8.2017		6.7	5.8	6.5	6.5	14.7	6.8	7.5	7.0	53.4	57.4	55.8	60.4	158.9	160.5	157.4	164.4
SEPTEMBER	1	4.9.2017	1st	5.5	7.2	5.5	6.5	7.2	8.2	6.3	7.7	59.1	57.8	45.8	55.1	165.2	166.3	152.2	159.3
	2	7.9.2017		6.5	6.5	3.5	5.5	7.0	7.5	4.8	6.5	55.8	55.8	40.6	51.1	162.7	159.6	147.5	156.0
	3	11.9.2017	2nd	6.8	6.5	6.8	6.7	7.0	8.5	7.2	7.5	60.1	60.3	54.2	60.1	163.1	168.2	159.0	166.3
	4	14.9.2017		5.5	5.7	7.2	4.7	7.5	6.7	10.8	5.3	39.2	47.9	37.4	42.2	143.7	154.1	146.5	148.0
	5	18.9.2017	3rd	5.5	6.5	6.5	5.7	7.2	7.8	7.5	6.8	47.8	35.3	41.0	45.5	150.7	141.1	150.3	149.6
	6	21.9.2017		6.2	6.5	6.8	6.5	7.5	8.0	7.5	7.8	37.2	31.4	35.1	38.5	141.0	138.2	143.1	143.8
	7	25.9.2017	4th	7.5	6.5	6.3	6.8	9.5	7.5	7.3	7.2	34.8	29.5	38.4	38.2	137.7	135.7	145.0	141.7
	8	28.9.2017		6.5	6.5	7.5	5.7	8.5	7.5	9.5	7.8	40.3	36.6	41.6	47.5	146.7	147.6	144.2	151.4
OCTOBER	1	5.10.2017	1st	4.5	6.5	6.7	6.5	6.8	8.7	7.5	8.5	54.2	30.0	45.8	45.2	159.7	138.4	149.7	141.8
	2	9.10.2017		5.5	5.8	7.5	6.8	7.5	7.5	9.2	7.2	58.9	38.9	40.6	52.9	163.5	148.6	155.2	151.6
	3	12.10.2017	2nd	7.5	7.5	7.2	7.5	9.5	9.5	8.2	9.3	31.0	69.4	54.2	63.7	139.2	175.4	168.1	147.5
	4	16.10.2017		5.7	9.2	6.5	7.0	9.5	12.3	7.8	8.2	56.6	50.5	37.4	71.2	161.1	147.5	178.8	144.9
	5	19.10.2017	3rd	6.5	7.5	8.2	8.5	9.2	12.5	13.5	13.0	65.5	46.2	41.0	56.8	172.2	154.4	163.3	157.6
	6	23.10.2017		7.5	5.8	7.5	6.5	9.5	7.5	9.3	7.8	44.3	29.5	35.1	46.6	151.1	137.3	149.9	153.7
	7	26.10.2017	4th	7.5	6.5	11.0	6.5	9.5	8.7	13.5	8.2	51.0	53.2	38.4	53.0	157.4	161.1	158.2	163.1

	8	30.10.2017	4th	11.7	7.5	7.5	6.5	14.3	9.2	10.5	7.5	47.7	45.4	41.6	44.3	156.5	152.7	152.6	163.1
NOVEMBER	1	2.11.2017	1st	5.5	6.3	5.8	5.8	6.5	7.0	6.7	6.7	59.0	60.4	56.6	47.3	163.3	170.8	162.1	154.2
	2	6.11.2017		6.0	5.0	6.0	7.5	7.5	6.5	7.0	10.5	44.7	58.5	44.9	60.3	152.0	166.0	150.0	168.4
	3	9.11.2017	2nd	6.3	6.2	5.2	6.5	7.2	7.0	6.8	9.5	56.1	51.0	35.8	55.7	142.8	161.2	142.9	162.7
	4	13.11.2017		5.8	7.0	5.5	5.5	6.0	8.5	6.8	8.5	71.8	45.7	40.9	67.1	179.1	153.2	148.5	172.5
	5	16.11.2017	3rd	6.2	5.5	6.3	7.2	7.3	6.8	7.3	8.5	63.0	53.1	55.9	58.5	170.2	161.3	164.1	158.0
	6	20.11.2017		6.5	6.7	6.0	8.2	7.5	12.5	7.0	9.0	59.1	41.4	45.3	41.6	167.2	152.8	152.9	147.4
	7	23.11.2017	4th	5.8	5.7	6.3	6.7	6.3	6.8	7.0	7.0	71.1	50.8	59.7	49.1	175.5	157.2	164.3	157.8
	8	27.11.2017		6.0	8.2	7.5	8.2	7.0	9.5	10.8	9.5	81.0	54.2	51.1	59.9	187.9	161.2	156.2	165.3
	9	30.11.2017		7.5	8.5	6.5	7.0	9.5	10.5	9.0	10.5	57.0	67.7	60.2	56.7	161.3	171.8	170.4	162.9
DECEMBER	1	3.12.2017	1st	6.0	6.7	6.3	6.0	7.8	8.7	7.0	7.8	58.5	59.7	62.0	53.7	164.3	165.6	167.8	151.6
	2	6.12.2017		5.5	7.8	6.3	5.5	6.8	9.5	7.7	6.8	51.1	66.8	58.4	64.2	160.9	171.5	164.8	169.5
	3	10.12.2017	2nd	5.8	7.5	7.0	5.8	6.8	9.0	8.8	6.8	67.3	70.2	67.4	58.9	172.7	189.6	175.7	162.7
	4	13.12.2017		6.3	7.5	6.5	6.3	7.2	8.5	7.5	7.2	60.5	54.8	58.7	59.2	165.7	165.8	162.3	160.8
	5	17.12.2017	3rd	6.7	6.7	7.2	7.5	8.5	7.5	8.5	10.5	69.8	61.2	63.4	57.5	179.3	167.7	167.5	157.2
	6	20.12.2017		7.0	6.5	6.5	7.5	8.2	7.5	8.0	8.0	61.1	57.3	66.0	56.3	167.8	161.1	169.3	160.4
	7	23.12.2017	4th	8.5	7.0	6.5	6.5	9.2	8.2	7.5	8.2	53.3	46.1	59.5	51.0	166.1	149.9	168.9	157.8
	8	27.12.2017		6.5	7.5	8.5	7.5	7.7	8.5	9.2	8.5	62.3	52.2	63.9	55.0	168.6	156.4	168.7	158.2
	9	30.12.2017		8.0	6.5	9.5	6.5	10.5	10.5	12.5	12.5	58.5	53.3	45.3	59.7	163.9	158.2	150.7	165.6
JANUARY	1	3.1.2018	1st	5.7	7.5	7.5	6.2	7.2	6.7	9.0	7.5	56.3	55.2	59.5	56.3	161.1	160.0	167.1	160.4
	2	6.1.2018		6.5	6.0	7.5	8.0	7.3	7.5	8.2	9.2	46.9	50.8	67.7	60.1	154.4	158.3	174.4	164.5
	3	10.1.2018	2nd	5.5	7.5	5.5	7.5	6.7	8.7	7.5	9.5	50.2	46.5	52.6	52.9	156.7	150.5	155.4	159.0
	4	13.1.2018		6.7	7.0	6.5	6.5	7.2	8.0	7.8	7.8	41.4	40.7	65.5	48.3	148.7	149.2	171.8	152.3
	5	17.1.2018	3rd	6.8	8.0	6.5	6.0	7.2	7.5	7.3	8.5	57.8	56.8	63.2	43.9	164.8	160.3	165.0	151.6
	6	20.1.2018		7.5	7.2	7.5	7.5	8.2	8.0	8.5	8.5	53.6	50.2	57.9	53.6	160.9	152.5	178.1	160.9
	7	24.1.2018	4th	6.5	7.5	6.7	6.7	7.5	8.2	7.8	7.8	57.4	65.5	53.6	53.6	161.0	170.7	168.2	160.0
	8	27.1.2018		3.5	5.7	6.0	7.5	4.5	7.0	8.5	8.7	59.9	52.8	57.9	67.5	164.4	161.1	163.9	171.0
	9	31.1.2018		5.0	7.5	5.5	5.5	7.5	8.0	6.5	10.5	61.8	57.8	63.4	62.2	178.3	160.5	172.0	173.7
FEBRUARY	1	3.2.2018	1st	6.0	6.5	4.7	5.5	7.0	7.3	5.3	7.2	57.9	60.9	58.3	68.3	163.3	167.0	164.8	174.9
	2	7.2.2018		5.8	6.8	6.8	7.5	6.5	8.0	7.2	9.5	66.2	51.1	48.1	76.0	171.2	156.2	154.9	183.5
	3	10.2.2018	2nd	7.7	7.8	6.7	6.5	13.3	8.2	7.5	8.5	52.8	64.8	64.3	63.1	157.3	170.5	167.8	168.9
	4	14.2.2018		7.2	7.5	5.5	5.7	15.8	8.2	6.5	6.7	45.8	71.2	53.2	49.2	151.4	179.9	162.6	152.9
	5	17.2.2018	3rd	4.2	6.2	5.7	6.8	8.5	7.8	7.8	7.2	68.7	61.3	43.5	66.2	172.8	168.6	152.8	170.5
	6	21.2.2018		6.5	6.7	7.2	6.3	7.5	7.5	10.8	7.3	61.5	59.7	59.1	58.7	168.0	168.9	168.7	166.0
	7	24.2.2018	4th	7.7	6.8	5.5	7.2	13.3	8.2	6.3	10.8	67.7	64.8	52.8	68.7	172.6	169.5	159.3	172.1
	8	28.2.2018		7.2	7.5	7.5	8.3	10.8	10.8	8.5	9.5	70.1	69.3	59.2	53.9	177.5	176.7	162.1	161.3
MARCH	1	1.3.2018	1st	6.2	5.8	5.5	5.7	7.2	6.3	6.2	6.3	59.8	66.5	62.3	60.1	164.4	170.0	167.2	166.2
	2	5.3.2018		5.5	6.0	6.2	6.8	6.2	7.5	7.0	7.2	54.1	50.4	66.3	52.7	161.6	157.1	172.0	162.2
	3	8.3.2018	2nd	6.2	5.5	5.8	5.8	7.5	6.8	6.3	6.5	65.1	60.7	58.3	64.0	177.0	171.4	163.3	168.2
	4	12.3.2018		5.5	6.2	6.0	6.0	6.3	7.3	7.0	7.5	46.4	51.4	59.2	60.1	154.6	157.3	164.9	168.7
	5	15.3.2018	3rd	5.3	6.0	6.0	5.5	6.7	7.5	7.5	6.7	60.8	63.5	61.7	57.6	167.3	174.0	165.1	166.8
	6	19.3.2018		6.0	6.0	5.8	5.3	7.2	7.0	6.3	6.7	67.3	56.1	69.6	50.5	170.8	165.1	174.4	166.2
	7	22.3.2018	4th	4.3	5.2	6.2	5.7	6.5	6.7	7.2	6.8	64.4	70.5	63.4	53.7	172.4	174.1	166.2	158.8
	8	26.3.2018		2.8	6.5	6.5	6.3	6.7	7.2	7.0	7.2	47.9	63.8	67.5	61.8	157.8	168.2	171.1	167.0
	9	29.3.2018		4.0	6.0	5.5	5.5	8.0	7.5	6.5	11.0	56.6	59.3	57.5	69.4	163.1	166.7	165.7	175.7
Avg				**6.5**	**6.8**	**6.7**	**6.6**	**8.5**	**8.1**	**7.9**	**8.1**	**56.6**	**55.6**	**54.5**	**56.1**	**162.0**	**160.9**	**160.8**	**160.6**
Min.				**2.8**	**5.0**	**3.5**	**4.7**	**4.5**	**6.2**	**4.8**	**5.3**	**30.4**	**29.5**	**28.1**	**38.2**	**137.7**	**135.7**	**131.2**	**141.7**
Max.				**11.7**	**9.2**	**11.0**	**8.5**	**15.8**	**12.5**	**13.5**	**13.0**	**81.0**	**71.2**	**71.9**	**76.0**	**187.9**	**189.6**	**182.8**	**183.5**

Muddapur Limestone Mines, (Karnataka)

(Unit: J.K. Cement Ltd.)

$PM_{2.5}$ MONITORING REPORT FROM APRIL-2017 TO MARCH-2018

Site	Month	Date	Monitoring Location	Parameter $PM_{2.5}$ ($\mu g/m^3$)
Muddapur	Apr-17	03.4.2017	A	31.5
		04.4.2017	B	30.6
		06.4.2017	C	31.2
		07.4.2017	D	32.6
Muddapur	May-17	06.05.2017	A	32.3
		07.05.2017	B	31.2
		08.05.2017	C	30.5
		09.05.2017	D	31.4
Muddapur	Jun-17	05.6.2017	A	30.6
		07.6.2017	B	32.4
		08.6.2017	C	40.2
		10.6.2017	D	42.6
Muddapur	Jul-17	03.7.2017	A	32.5
		04.7.2017	B	30.6
		05.7.2017	C	35.4
		06.7.2017	D	40.2
Muddapur	Aug-17	07.8.2017	A	30.8
		08.8.2017	B	32.6
		09.8.2017	C	35.4
		10.8.2017	D	38.8
Muddapur	Sep-17	04.9.2017	A	32.7
		05.9.2017	B	30.5
		06.9.2017	C	34.6
		07.9.2017	D	37.4
Muddapur	Oct-17	9.10.2017	A	34.5
		10.10.2017	B	32.6
		12.10.2017	C	40.2
		13.10.2017	D	32.8
Muddapur	Nov-17	4.11.2017	A	35.4
		5.11.2017	B	30.2
		6.11.2017	C	40.2
		7.11.2017	D	42.5
Muddapur	Dec-17	4.12.2017	A	34.8
		5.12.2017	B	32.1

[illegible]	[illegible]	6.12.2017	C	38.5
		7.12.2017	D	41.6
Muddapur	Jan-18	4.1.2018	A	32.2
		5.1.2018	B	34.8
		6.1.2018	C	31.6
		8.1.2018	D	40.2
Muddapur	Feb-18	5.2.2018	A	36.2
		7.2.2018	B	32.8
		9.2.2018	C	33.5
		12.2.2018	D	35.4
Muddapur	Mar-18	13.3.2018	A	30.6
		14.3.2018	B	32.5
		15.3.2018	C	40.2
		16.3.2018	D	34.8
Minimum				**30.2**
Maximum				**42.6**
Average				**34.56**

MUDDAPUR LIME STONE MINE, (KARNATAKA)

(Unit : J.K. Cement Ltd.)

Fugitive Emission Monitoring Report of Muddapur mines for the period from April-2017 to March-2018

Sl. No.	MONTH	SPM ($\mu g/m^3$)				
		Loading Area	Drilling Area	Haulage Area	Waste Dumping Site	Service Road
1	Apr-17	475.2	657.9	555.8	713.2	584.2
2	May-17	484.1	660.0	552.9	711.9	573.0
3	Jun-17	511.8	654.3	625.7	725.6	600.2
4	Jul-17	578.6	629.9	567.8	470.0	554.8
5	Aug-17	530.2	631.3	540.2	630.7	577.6
6	Sep-17	641.2	636.1	679.2	569.8	508.9
7	Oct-17	596.3	654.01	710.70	696.88	571.69
8	Nov-17	696.9	560.42	584.20	595.44	659.41
9	Dec-17	465.3	519.41	534.90	577.12	622.51
10	Jan-18	500.9	535.59	523.61	536.10	597.22
11	Feb-18	437.4	715.81	511.09	608.44	635.86
12	Mar-18	615.2	613.70	652.50	516.30	474.29
Minimum		437.4	519.4	511.1	470.0	474.3
Maximum		696.9	715.8	710.7	725.6	659.4
Average		544.4	622.4	586.5	612.6	580.0

Annexure-4

Muddapur Limestone Mine (Karnataka)
(Unit: J.K. Cement Ltd.)

Noise monitoring report of Muddapur mines for the period from April-2017 to March-2018

Sl.No.	Time	Month	Muddapur Mines boundary	Muddapur Mines Office	Muddapur mines Drilling Time	Muddapur mines Waste dumping site	Muddapur mines Service Road	Excavator
1	Day	Apr-17	40.9	42.1	41.3	42.3	44.8	51.8
	Night		31.5	32.4	_	34.2	32.8	_
2	Day	May-17	39.8	43.1	42.7	43.1	43.6	50.8
	Night		31.2	33.4	_	33.8	34.6	_
3	Day	Jun-17	42.2	36.8	42.5	41.5	43.8	51.6
	Night		31.6	28.2	_	34.2	35.8	_
4	Day	Jul-17	43.5	36.8	43.7	42.8	42.5	52.4
	Night		30.5	29.5	_	35.6	32.5	_
5	Day	Aug-17	43.1	37.5	42.7	43.5	40.8	50.8
	Night		31.6	29.8	_	36.6	31.8	_
6	Day	Sep-17	40.2	35.4	40.4	41.5	38.6	50.4
	Night		32.4	26.8	_	35.4	30.6	_
7	Day	Oct-17	42.5	38.6	40.8	42.7	40.2	50.4
	Night		33.6	27.5	_	34.6	30.8	_
8	Day	Nov-17	44.8	40.4	38.6	41.7	36.8	51.7
	Night		32.5	26.8	_	33.7	31.6	_
9	Day	Dec-17	45.8	42.8	37.4	40.2	36.8	50.4
	Night		31.6	28.8	_	34.7	30.6	_
10	Day	Jan-18	45.6	41.5	42.8	45.2	43.6	55.2
	Night		34.6	32.5	_	30.5	32.8	_
11	Day	Feb-18	42.6	40.8	41.2	44.8	46.5	53.5
	Night		33.5	32.8	_	35.2	36.1	_
12	Day	Mar-18	42.7	40.2	39.6	45.5	48.7	50.8
	Night		30.5	31.8	_	35.6	36.2	_