



JK Cement WORKS

MUDDAPUR

(Unit : J.K. Cement Ltd)
CIN : L17229UP1994PLC017199

Phone : +91-8350-289000
Fax : +91-8350-289001
E-mail : factory.muddapur@jkcement.com

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

No. JKCW/ENV. /E.C. (HALKI)/10/22

Date- 23-11-2018

To,
The Deputy Director
Ministry of Environment & Forest
Govt. of India
Indira Paryavaran Bhavan
New Delhi- 110 003

Sub: Half Yearly Environmental Clearance Compliance report for the period from April-2018 to September-2018 for our Halki Lime stone mine

Ref: MoEF Letter No. J-11015/384/2006-1A.II (M) /dtd. 21st January 2008

Dear Sir,

With reference to your above cited environmental clearance letter of our Halki Lime Stone Mine. We are sending here with enclosed point wise compliance report for the period from April-2018 to September-2018 for your kind information and record please.

Thanking you

Yours faithfully
For Halki Lime Stone Mine

RBM Tripathi
(Unit Head)

Encl. – Compliance report, Socio-economic development report, half yearly ambient air quality monitoring, fugitive emission monitoring, water testing, Noise monitoring report and six monthly environmental expenditure

CC:

- 1- The Addl. Principal Chief Conservator of Forest (C) , Ministry of Environment & Forest, Regional Office (South Zone), 4th floor, E&F Wings, Kendriya Sadan, 17th Main Road, IInd Block, Koramangala, Bangalore
- 2- Chairman, Central Pollution Control Board, Parivesh Bhavan, East Arjun Nagar, New Delhi
- 3- Scientist 'D' & Incharge, Central Pollution Control Board, 1st & 2nd Floors, Nisarga Bhavan , A-Block, Thimmaiah , Main Road, 7th D Cross, Shivanagar, Opp. Pushpanjali Theatre, Bengaluru -560 010
- 4- Member Secretary, Karnataka Pollution Control Board, Church Street, Bangalore
- 5- The Environmental officer , Karnataka State Pollution Control Board, Sector no.07, by pass road, Navanagar, Bagalkot – 587102



Registered & Corporate Office :
Kamla Tower, Kanpur - 208 001(UP)
Ph. : 0512-2371478-81 Fax : 0512-2399854
E-mail : ho.grey@jkcement.com
Website : www.jkcement.com

Central Marketing Office :
4th Floor, Krsna Chambers, Plot No. 11, Galaxy Garden
North Main Road, Koregaon Park, Pune - 411001
Ph. : 020-41350000 Fax : 020-41350099
Email : cmo.south@jkcement.com

Halki Limestone Mine, Village- Halki, Taluk- Mudhol, Distt.- Bagalkot, Karnataka

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Half Yearly Compliance Report for the period from April-2018 to September-2018

EC to Halki Limestone Mine (ML area 124.24 ha and 2.0 MTPA of limestone Production) of M/s J.K. cement Ltd., at village Halki, in Mudhol Taluk, Bagalkot, Distt. In Karnataka

Specific Condition:

S.N.	Condition	Compliance status
A.	Specific Conditions	
i)	Land use pattern of nearby village shall be studied and action plan for abatement and compensation for damage to agriculture land /common property land as applicable due to mining activity shall be submitted to the Regional office of the Ministry within six month. Annual status of implementation of the plan and expenditure thereon shall be reported to the regional office of the ministry.	Complied. It has been studied with EIA which submitted to concerned authority. Mining is being done as per IBM approved modified mining Plan so there is no damage to agriculture land /common property.
ii)	Need based assessment for the nearby villages shall be conducted to study economic measures which can help in upliftment of poor section of society such as development of fodder farm, fruit orchard, vocational training etc. Year wise allocation of funds for implementation of these economic measures shall be reported to the regional office of the ministry within six months.	Complying. The impacts of mining Projects are positive. Surrounding village people are sustaining their lively hood in this project. The literacy rate and better living standards enhanced due to increased earning capacity of villagers, better medical facility, and transportation and communication facilities. For socio economic development we have granted funds to the nearby villagers. A copy attached as annexure. I
iii)	A no. of mining zone barrier of 50 m from the canal passing through the lease areas on both sides shall be demarcated and the area shall be afforested with thick species of native vegetation.	Complied. A no. of mining zone barrier of 50 m from the canal passing through the lease areas on both sides has been demarcated and it is planned to shift the canal outside the lease area.
iv)	Recommendations of NEERI, Nagpur, as mentioned in their report on status of Environment –“Action plan ” for the State of Karnataka, as be applicable to this project, shall be reported to the Regional office of the Ministry.	Not Applicable
v)	Conservation plan for wild life shall be prepared in consultation of with the Chief wild life warden and shall be implemented within six months. Necessary allocation of fund for implementation of the same and the status of implementation of the plan shall be reported to the regional office of the Ministry.	Not Applicable as there is no forest area nearby mining lease.
vi)	Measures for control and preventions of soil erosion and management of silt shall be prepared	Complied. Soil erosion control measures have been mentioned in

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	and submitted to the Regional office of the ministry within six months	EIA which is already submitted to MoEF.
vii)	Water quality both for surface as well as ground water in the core zone shall be regularly monitored for contamination due to mining activity and records maintained. In case contamination is observed, measures for control and action taken shall be reported to the State Government as well as the Regional Office of the Ministry within six months.	Complying. Water quality is being monitored regularly and no contamination has been observed.
viii)	Water bodies shall be developed and utilized to develop Pisciculture. Fishermen cooperative society shall be established with the land losers (if any) and specially the poorer section as members of society. Initial financial assistance either in the form of shared money or other wise and managerial assistance shall be provided so that the members themselves can run the affairs of the society in due course. The project proponent shall arrange marketing tie up so that the society gets fair price of their produce and the profits are equitably shared by the members of the society as regular source of income.	To be complied. At the final closure of mine, Mining pit will be developed as water body and to be utilized to develop Pisciculture.
ix)	Action taken report on issues raised during the public hearing shall be submitted to the Ministry and the State Governments within six months.	Complied and it has been submitted.
x)	Occupational health and safety measures for the workers including training on malaria eradication, HIV, health effects on exposure to mineral dust etc. shall be carried out. The company shall engage a full time doctor who is trained in occupational health surveillance .Records of the health of the workers shall be maintained.	Complying. Initial and periodical medical examinations of all mine workers are being done on regular basis as required under Mine Rule 1955 and training on various medical aspects are being imparted. The company has engaged fulltime doctor who is trained in Occupational health surveillance. Records are being maintained.
xi)	Top soil/solid waste(if any) shall be stacked properly with proper slope and adequate safe guards and shall back filled for reclamation and rehabilitation of the mined area	Complying. Top soil is being utilized for planation and solid waste is being stacked properly with proper slope and adequate safe guards have been provided.
xii)	Over burden if any shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not be exceed 30m,each stage shall preferably be of 10m and overall slope of the dump shall not	Being Complied. Over burden is being stacked at earmarked dump site as planned in mining plan. Presently, dumps are active. After completion of dumps, planation will

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	exceeded 28°. The OB dump shall be backfilled. The OB scientifically vegetated with suitable native species to prevent erosion and surface run off. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self – sustaining. Compliance status shall be submitted to the Ministry of Environment Forests on six monthly bases.	be done. Presently dump height is 18 meter with two stages and overall slope is maintained less than 28°. The OB dump is being scientifically vegetated with suitable native species to prevent erosion and surface run off .Compliance report is being submitted to the ministry of environment and forest on six monthly basis.
xiii)	Garland drains shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilised for watering the mine areas, roads, green belt development etc. The drains shall be regularly de-silted particularly after monsoon and maintained properly. Garland drain of appropriate size, gradient and length shall be designed keeping 50% safety margin over and above peak sudden rain fall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity will also provide adequate retention period to allow proper settling of silt materials. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals. Check dams and gully checks shall be constructed across nallahs (if any) flowing through the lease area.	Complying. Garland drains have been made around dumps and pit. The collected water in the pit is being used for green belt development and water spray on haul roads for controlling fugitive dust emission. There is no nallahs within the lease area.
xiv)	Slope of mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of mines.	Complying. Slope of mining bench and ultimate pit limit are followed as per the mining plan approved by Indian Bureau of mines.
xv)	Green Belt Development shall be carried out considering CPCB guidelines including selection of plan species and in consultation with DFO. Herbs, shrubs shall also form a part of a forestation programme besides tree plantation. Plantation shall be raised in 22.0 ha around the ML area, haul roads, OB dump sites etc. the density of the trees shall be not less than 2500 plants per ha. The company shall involve local people with the help of self help group for plantation programme.	Complying. Green Belt Development is being done with native species and in consultation with DFO as committed in Mining plan.
xvi)	Details of the year wise a forestation programmed already under take as well as proposed to be taken of including rehabilitation of mined out areas shall be submitted to the Ministry within six months.	Complied. Details of the year wise a forestation programme is already submitted to MoEF and Plantation is being done as per mining plan.

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xvii)	The project authority shall implement suitable conservation measures to augment ground water resource in the areas in consultation with the Regional Director, Central Ground water Board. Status of implementation shall be reported to the regional office of the Ministry from time to time.	Complying. Surface/rain water harvested in pit recharges ground water as water percolates down wards due to inclined strata.
xviii)	Prior permission from the competent authority shall be obtained for extraction of ground water, if any.	Complied. Presently we are not using ground water. Our water requirement fulfilled with mine pit rain water.
xix)	Drilling and blasting (if any) shall be conducted by using dust extractors/ wet drilling.	Complying. Wet drilling is being done.
xx)	Vehicles used for transportation of ores and other mining operation shall have valid permission as prescribed under Central Motor Vehicles rules,1989 and its amendments . Transporting of ores shall be done covered with a tarpaulin or other suitable enclosures so that no dust particles /fine matters escape during the course of transportation. No overloading of ores for transportations shall be under taken.	Complying. Vehicles used for transportation of ores and other mining operation have valid permission as prescribed under Central Motor Vehicles rules,1989 and its amendments. It is ensured that no spillage is occurred during transportation.
xxi)	Village roads through which transportation of ores are being carried out shall be regularly maintained by the company at its own expenses.	Complying. Village roads through which transportation of ores are being carried out shall be regularly maintained by the company at its own expenses.
xxii)	A final mine closure plan, along with details of corpus funds, shall be submitted to the Ministry of Environments & Forests within six months, in advance of final mine closure for approval.	Will be followed at the time of mine closure.
B	General Condition:	
i)	No change in mining technology and scope of working shall be made without prior approval of Ministry of Environment & Forests.	Agreed.
ii)	No change in calendar plan including excavation, quantum of mineral, limestone and waste shall be made.	Agreed.
iii)	Four Ambient Air Quality – monitoring station shall be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _x monitoring . Location of the stations should be decided based on the metrological data, Topographical features and Environmentally and ecologically sensitive targets and frequency of monitoring should be under taken in consultation with the State Pollution Control Board.	Complied. Four Ambient Air Quality – monitoring stations have been established.
iv)	Data on Ambient Air Quality (RSPM, SPM, SO ₂ , and	

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	NOx) should be regularly submitted to the Ministry including its Regional Office located at Bangalore and the State Pollution Control Board/Central Pollution Control Boards once in six months.	
v)	Fugitive dust emissions from all the sources shall be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points shall be provided and properly maintained.	Being Complied. Water is spraying on the haul roads, loading and unloading points by tankers.
vi)	Measures shall be taken for control of noise level below 85 dBA in the work environments. Workers engaged in operations of HEMM, etc shall be provided with ear plugs/ muffs.	Being complied, earplugs/ muffs have been provided.
Vii)	Industrial waste water (Works shop and waste water from the mine should be properly collected , treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May , 1993 and 31st December 1993 or as amended from time to time. Oil and Grease trap shall be instilled before discharge of effluents.	Not applicable, there is no workshop in mines area and no waste water discharged from mines.
viii)	Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information of Safety and Health aspects.	Complying. Personnel working in dusty areas have been provided with protective respiratory devices and imparted adequate training and information of Safety and Health aspects.
ix)	A separate Environmental Management cell with suitable qualified personnel shall be set up the control of Senior Executive, who will be report directly to the head of the organization.	Complied. A separate Environmental Management cell with suitable qualified personnel has been set up the control of Senior Executive, who is report directly to the head of the organization.
X)	The project authorities shall informed to the Regional Office of the Ministry located at Bangalore regarding date of financial closures and final approval of the project by the concern authorities and the date of start of land development work.	Complied.
xi)	The funds earmarked for Environmental Protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the Ministry and its Regional office located at Bangalore.	Complied.
xii)	The project authorities shall informed to the Regional Office of the Ministry located at Bangalore regarding date of financial closures and final approval of the project by the concern authorities and the date of start of land development work.	Complied.

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xiii)	The Regional Office of the Ministry, Bangalore shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional office by furnishing the requisite data/ information /monitoring reports.	Agreed.
xiv)	A copy of clearance letter will be marked to concerned panchayat /local NGO, if any from whom suggestion /representation has been received while processing the proposal.	Complied.
xv)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and collector's office /Tehsildar's office for 30 days.	Agreed
xvi)	The project authorities shall advertise at least in two local News papers widely circulated , one of which shall be in the vernacular languages of the localities concern within 7days of issue of the clearance letter informing that the project has been accorded Environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of the Environment & Forests at http: www.envfor.nic.in and a copy of the same shall be forwarded to the Regional Office of the Ministry located at Bangalore .	Complied.

We hope, you will find our reply in order.

Thanks with regards.

Yours faithfully
For Halki Lime Stone Mine


for RBM Tripathi
(Unit Head)

Annexure-1

Social Development Expenses for the period from April 2018 to September 2018

S.No.	Subject	Amount (Rs.)
1	Sir Padampat Primary School Salary May 2018	1,00,000.0
2	Sir Padampat Primary School Salary August 2018	2,00,000.0
3	Sir Padampat Primary School Salary sept 2018	2,50,000.0
4	Tahasildar Mudhol Sweet Distribution School Misc.Sweets to School Childrens on 15.08.2017 Mudhol	50,000.0
5	TABLE COMPUTER,COMPUTER TABLE,CHAIR at Muddapur School	19,067.8
6	TABLE COMPUTER,COMPUTER TABLE,CHAIR at Muddapur School	14,830.5
7	TABLE COMPUTER,COMPUTER TABLE,CHAIR GST Portion at Muddapur School	3,432.2
8	TABLE COMPUTER,COMPUTER TABLE,CHAIR GST Portion at Muddapur School	2,669.5
9	EXP AGST SWACHTA PAKHWADA ADJUSTED at MINES	1,565.0
10	Tax ADDEDTOCost AT MUDDAPUR SCHOOL	2,671.0
11	FIXING WOODEN BOARD OF 8"X10" MUDDAPUR MINES	218.7
12	FIXING WOODEN BOARD OF 6"X6" MUDDAPUR MINES	26.9
13	FIXING OF 5A SWITCH WITH CONNECTION MUDDAPUR MINES	667.7
14	FIX 5A SOCKET ON EXISTING BOARD & WIRING MUDDAPUR MINES	667.7
15	WIRING OF SUBMAIN IN CASING WITH 1.5 MM2 MUDDAPUR MINES	11,496.8
16	EREC OF JB WITH FRAME 10-30 TERMINALS MUDDAPUR MINES	305.5
21	MAKING OF EARTHING ELECTRODE ON HARDROCK MUDDAPUR MINES	1,456.4
22	NINGAPUR COMPUTER SUPPLY AT SCHOOL	2,260.0
23	FIXING WOODEN BOARD OF 8"X10" MUDDAPUR MINES	174.9
24	FIXING WOODEN BOARD OF 6"X6" MUDDAPUR MINES	26.9
25	FIXING OF 5A SWITCH WITH CONNECTION MUDDAPUR MINES	546.3
26	FIX 5A SOCKET ON EXISTING BOARD & WIRING MUDDAPUR MINES	546.3
27	WIRING OF SUBMAIN IN CASING WITH 1.5 MM2 MUDDAPUR MINES	9,504.0
28	EREC OF JB WITH FRAME 10-30 TERMINALS MUDDAPUR MINES	305.5
29	MAKING OF EARTHING ELECTRODE ON HARDROCK MUDDAPUR MINES	1,456.4
30	PHOTO BILL ADJUSTED AT HALKI SCHOOL	2,610.0
31	HANDRAIL SHIV MANDIR AT LOKAPUR	2,17,791.4
32	SYNTHETIC ENAMEL ON OLD STEEL (OTHER) LOKAPUR CIRCLE PAINTING WORK	3,520.5

33	ALUMINIUM PAINT ON OLD WORK(SET CEMENT) LOKAPUR CIRCLE PAINT WORK	1,319.9
34	APPEX PAINT(COLOUR) FOR LOKAPUR CIRCLE	2,911.3
35	HP COMPUTER,DVD WRITER,PRINETR FOR MUDDAPUR SCHOOL	1,59,257.6
36	HP COMPUTER,PRINTER,DVD WRITER TO NINGAPUR GOVT SC	1,29,864.4
37	company contribution twrds acupressure magnetic treatment for public camp at colony	11,000.0
38	SELF CONS OF CEMENT 07-18- 2.50 MTS- LOKAPUR TEMPL	6,365.0
39	HALKI GOVT. SCHOOL TOILET CONSTRUCTION.	2,00,000.00
40	drama function at budni	5,100.00
41	shri g m karjol sb visit	2,140.00
42	chindern school fee FOR POOR STUDENTS	5,000.00
43	sweet dist'n at halki school	400.00
44	ganesh festival at lokapur police stn	10,000.00
45	Shankar Narayan Naik Election Help Misc.Elections Campaign for JDS Party 2018	2,00,000.00
46	Shankar Narayan Naik Election Help Misc.Elections Campaign for JDS Party 2018	1,50,000.00
47	Shree Kashilingeshwar Seva Sameeti, MuddapurShri Kashilingeshwar Jathra 19.04.18 to 21.04.18	1,25,000.00
48	Basappa V. Hongal - Guru Sadashiv Jatra Misc.Guru Sadashiv Muttya & Chandrigiri Jatra,Petlur	25,000.00
49	Shrishail H. Hampiholi Ningapur MiscelleniousBalumama Maharaj Jathra at Ningapur	25,000.00
50	Director, Deptt. of Sainik Welfare & Resettlement	2,700.00
51	Sri Brahmanand Swamiji Jhaneswar Math Lokapur	1,00,000.00
52	mounesh s badiger hebbal eduction aid to student	20,000.00
53	bhimappa d. kencharaddi halaki pandurang dindi yat	21,000.00
54	DURGADEVI TRUST COMMITTEE LOKAPUR .20.07.18-24.07.	75,000.00
55	Mahadevi I Shivayogimath Petlur Medical Help Misc.Medical Help Poor Woman Injured by Leges in temple	50,000.00
56	Kariyappa Angadi Petlur Social Development Misc.High Mask Tower at Petlur Constructions	1,00,000.00
57	Dundappa B Mali BE Civil for Education Help	25,000.00
58	SURESH MUNDAGANUR (SARASWATI DAUGHTER) TUTION FEES	15,000.00
59	RAMAPPA ITTANAVAR (GANESH SON)BE COMPUTER SCI.3 YR	15,000.00
60	R.M. Yadahalli Foundation Social Development Misc.Shravan Month Old Age Poor Person Shirdi Yatra	75,000.00
61	Holabasappa tulasigeri ningapurshri pandurang dindi utsav ningapur 25.08.2018	25,000.00
62	Hanamant s. mali .kasaba jambangishri basaveshwar jatra rath niraman at kasaba jamb	1,00,000.00
63	Bhimappa s. navalagishri durga devi jhatra lokapur.lighting arrangemen	10,000.00
64	Balaji Super Bazar Social Development Misc.Shri Lokeshara temple .lokapur 500 kg rice given	22,600.00

65	Shyamasundr P. Pravachan Programme Mudhol Misc.Shravana Maas Pravachan Mudhol Senior Association	50,000.00
66	Vithal t.saiyappagol.petlurLaxmi devi jhatra .annasantrpane at petlur (7-9-18	15,000.00
67	Kalmesh h.junnur (shri maruti spots club metgud)shri gajanan utsav sangeet programma at metgud	10,000.00
68	Panchakshari D Nevanakki Misc.Sub-Registrar Mudhol Office Building Construction	1,00,000.00
69	MR.R.Y.MEGERI HEAD MASTER KANNADA SCHOOL KAMAKERIkamakeri kannada primary school sport materials pu	10,000.00
70	Head Master GHPS Petlur Sport Expenses Misc.Zonal Level Sport Meet on 07.08.18 Food Arrangement	30,000.00
71	Holebasu Kushal Hebbal wrestling Coach Sponsorship	10,000.00
	Total	28,37,476.06

Environmental Expenditure for Halki Limestone Mine for Period April 2018 to September 2018

Sl. No.	Particulars	Cost (In Rs.)
1	Pollution control	1125000
2	Pollution Monitoring	91071
3	Occupational Health	52000
4	Green belt	74160
5	Reclamation	nil
6	Others	nil
	Total	13,42,231

HALKI LIMESTONE MINES, (KARNATAKA)

(Unit: J.K. Cement Ltd.)

Water analysis report of Core and Buffer Zone for the month of April -2018 to September-2018

Sample collected from		TEST REPORT										
Core Zone & Buffer Zone												
Sl. No.	Constituents	Desirable Limit	Core Zone		Buffer Zone							
			Halki mines pit	Halki Mines	Halki	Pettur	Metgud	Muddapur	Ningapur	Bamanbudini	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	162.70	92.67	126.53	131.22	129.55	125.23	126.63	126.63	120.97	
4	Turbidity	5 NTU	1.83	1.38	1.67	1.37	1.45	1.52	1.60	1.60	1.65	
5	pH	6.5-8.5	7.63	7.22	7.25	6.63	6.60	7.15	7.32	7.32	7.18	
6	Total Hardness	300	182.60	129.35	118.65	148.38	131.32	157.63	127.45	127.45	114.65	
7	Calcium	75	35.80	16.75	16.23	23.12	20.55	26.12	20.40	20.40	14.45	
8	Magnesium	30	18.28	12.33	8.88	11.48	10.80	15.42	9.62	9.62	9.52	
9	Alkalinity	200	128.40	84.42	94.05	117.18	114.20	119.02	103.87	103.87	115.02	
10	Chloride	250	170.48	123.05	123.87	143.42	134.23	153.03	124.02	124.02	127.75	

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

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

Halki Limestone Mines (Karnataka)

(Unit: J.K. Cement Ltd.)

Noise monitoring report of Halki mines (Core zone) for the month of April-2018 to September-2018

Sl.No.	Time	Month	Halki Mines boundary	Halki Mines Office	Halki mines Drilling Time	Halki mines Waste dumping site	Halki mines Service Road
1	Day	Apr-18	40.1	45.4	48.5	37.7	35.2
	Night		30.5	32.8	-	28.5	25.8
2	Day	May-18	45.6	42.2	43.3	42.1	40
	Night		32.8	33.7	-	31.6	30.8
3	Day	Jun-18	45.6	42.5	48.7	41.2	40.7
	Night		31.5	32.7	-	30.2	31.7
4	Day	Jul-18	46.6	44.2	51.5	41.8	45.1
	Night		30.5	33.6	-	31.6	33.2
5	Day	Aug-18	48.5	40.2	45.1	36.5	39.2
	Night		35.4	30.5	-	25.4	30.2
6	Day	Sep-18	42.2	36.4	35.5	41.8	37.7
	Night		31.7	27.4	-	32.8	29.5
Average	Day	Day	44.77	41.82	45.43	40.18	39.65
	Night		32.07	31.78	-	30.02	30.20
Minimum	Day	Night	40.10	36.40	35.50	36.50	35.20
	Night		30.50	27.40	0.00	25.40	25.80
Minimum	Day	Night	48.50	45.40	51.50	42.10	45.10
	Night		35.40	33.70	0.00	32.80	33.20

HALKI LIME STONE MINES, (KARNATAKA)

(Unit : J.K. Cement Ltd.)

Half yearly Fugitive Emission Monitoring Report of Halki mines for the month of April-2018 to September-2018

Sl. No.	MONTH/YEAR	SPM ($\mu\text{g}/\text{m}^3$)				
		Loading Area	Drilling Area	Haulage Area	Waste Dumping Site	Service Road
1	Apr-18	632.47	630.16	693.75	590.56	674.50
2	May-18	545.58	590.39	562.85	661.32	619.77
3	Jun-18	641.53	647.57	699.60	631.94	658.85
4	Jul-18	600.3	729.8	720.8	760.8	746.0
5	Aug-18	634.4	628.0	719.2	665.6	683.5
6	Sep-18	719.2	660.2	674.4	713.5	726.0
Minimum		545.58	590.39	562.85	590.56	619.77
Maximum		719.20	729.76	720.80	760.75	745.97
Average		628.93	647.69	678.44	670.62	684.76

HALKI Limestone MINES, (KARNATAKA)

(Unit: Jk Cement Ltd.)

HALF YEARLY AAQM REPORT (SO₂, NO₂, PM₁₀, PM_{2.5}) FROM APRIL-2018 TO SEPTEMBER-2018

(ALL VALUES IN MICROGRAMS / CUBIC METER)

Month	Sl. No.	Date	Week	SO ₂				NO ₂				PM ₁₀				PM _{2.5}			
				Locations				Locations				Locations				Locations			
				A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
A P R I L	1	04.4.2018	1st	6.7	6.5	3.5	5.0	9.5	8.5	7.5	7.2	58.5	68.6	57.9	60.0	41.7	45.8	29.2	37.50
	2	07.4.2018		7.0	5.8	6.5	6.7	9.3	7.5	8.2	8.2	69.9	62.9	62.0	68.4	33.3	50.0	45.8	29.17
	3	11.4.2018	2nd	6.5	4.5	4.5	4.5	9.5	9.5	8.5	12.5	66.0	50.5	65.2	56.4	37.5	25.0	33.3	33.33
	4	14.4.2018		5.5	5.5	5.7	3.7	8.3	9.8	10.5	10.7	57.1	44.8	53.6	41.7	45.8	37.5	41.7	41.67
	5	18.4.2018	3rd	4.8	7.5	3.5	4.5	7.0	10.3	8.7	8.7	60.4	52.5	60.5	61.8	29.2	29.2	37.5	20.83
	6	21.4.2018		5.5	6.2	6.5	7.0	7.0	8.5	8.2	9.7	68.7	49.5	67.5	47.6	40.8	25.0	29.2	20.83
	7	25.4.2018	4th	7.5	7.5	6.7	5.5	8.3	11.2	11.5	9.5	59.4	52.9	60.2	53.6	40.0	20.8	20.8	20.83
	8	28.4.2018		7.5	5.5	6.7	7.5	8.8	8.3	9.5	9.5	66.9	56.9	76.3	61.8	58.3	29.2	25.0	25.00
M A Y	1	02.5.2018	1st	6.5	6.5	5.5	6.5	8.2	9.5	7.5	9.5	61.8	78.8	89.7	43.5	45.8	11.5	37.5	37.50
	2	05.5.2018		8.5	7.5	7.0	8.3	11.3	8.8	11.2	9.0	70.0	64.2	80.6	65.7	37.5	21.9	25.0	29.17
	3	09.5.2018	2nd	7.5	6.7	6.8	7.0	10.7	11.3	12.5	9.5	58.4	70.7	50.6	75.5	25.0	19.9	37.5	25.00
	4	12.5.2018		6.7	5.8	7.5	5.8	9.0	9.2	9.5	8.2	63.0	65.7	68.3	58.6	37.5	47.5	33.3	29.17
	5	16.5.2018	3rd	5.7	7.0	8.5	8.2	9.2	9.7	12.8	12.7	73.8	60.2	73.4	77.2	41.7	60.0	37.5	33.33
	6	19.5.2018		7.5	8.0	8.3	7.5	11.5	10.5	10.0	8.7	58.8	57.8	64.0	61.2	25.0	33.3	20.0	29.17
	7	23.5.2018	4th	8.5	8.3	8.3	5.8	12.7	9.5	11.3	8.5	54.7	69.7	70.6	75.8	16.7	33.3	45.8	20.83
	8	26.5.2018		6.5	7.5	7.5	6.7	7.5	11.5	10.2	8.7	63.3	61.6	75.8	66.4	36.7	25.0	33.3	37.50
	9	30.5.2018		7.5	6.5	6.7	7.5	8.2	8.2	8.5	8.3	67.4	50.1	51.0	55.6	36.7	20.8	29.2	33.33
J U N	1	02.6.2018	1st	4.8	5.7	6.5	6.2	6.5	8.3	8.2	7.5	51.0	57.7	68.4	40.6	16.7	16.7	25.0	16.67
	2	06.6.2018		6.8	6.7	5.2	4.5	8.5	9.5	6.7	6.7	68.0	65.8	76.8	61.1	20.8	24.2	33.3	37.50
	3	09.6.2018	2nd	5.5	5.5	5.5	7.7	7.5	8.3	7.0	9.5	58.7	71.7	57.1	52.4	25.0	20.0	37.5	20.83
	4	13.6.2018		6.5	7.0	7.5	6.5	7.5	9.0	8.5	8.7	52.3	64.0	64.3	69.4	37.5	33.3	29.2	29.17
	5	16.6.2018	3rd	5.5	8.5	6.5	7.0	8.3	9.3	7.8	8.5	65.8	55.7	71.8	61.3	41.7	33.3	20.8	12.50
	6	20.6.2018		7.5	6.5	8.2	6.8	8.8	8.2	11.0	7.5	71.9	61.7	65.4	68.2	25.0	37.5	29.2	16.67
	7	23.6.2018	4th	6.5	8.3	6.7	7.5	9.0	9.5	7.5	8.5	56.1	67.6	58.8	74.5	33.3	33.3	33.3	20.83
	8	27.6.2018		4.5	6.7	6.7	6.5	8.8	8.3	7.5	7.7	67.1	56.2	68.1	61.3	20.8	25.0	37.5	37.50
	9	30.6.2018		5.5	5.5	7.8	4.5	7.5	8.2	8.8	7.5	71.9	65.3	57.0	78.4	37.5	25.0	37.5	20.83
J U L Y	1	04.7.2018	1st	5.5	6.7	6.0	7.5	7.5	7.5	8.5	8.7	55.3	57.7	68.2	71.9	29.2	29.2	45.8	20.83
	2	07.7.2018		4.5	4.5	3.5	3.5	8.3	5.7	6.5	6.0	64.6	65.8	57.0	45.4	45.8	33.3	37.5	37.50
	3	11.7.2018	2nd	3.0	3.5	5.2	4.5	5.7	4.5	7.5	7.0	32.6	71.7	26.9	34.1	41.7	41.7	37.5	45.83
	4	14.7.2018		5.5	6.7	3.5	3.5	8.3	7.5	7.5	6.2	62.2	64.0	46.9	52.1	29.2	45.8	45.8	33.33
	5	18.7.2018	3rd	6.7	7.5	4.5	5.5	9.5	9.3	6.8	8.2	57.3	55.7	51.0	68.4	33.3	37.5	41.7	37.50
	6	21.7.2018		5.3	2.7	3.5	3.5	7.5	6.0	6.5	7.5	52.7	61.7	61.6	54.2	37.5	29.2	36.7	45.83
	7	25.7.2018	4th	3.5	4.5	4.5	4.5	6.7	6.7	5.7	6.7	60.0	67.6	54.3	59.6	41.7	33.3	41.7	37.50
	8	28.7.2018		6.5	7.5	3.5	3.5	8.3	8.7	7.5	7.7	58.0	56.2	67.8	62.4	33.3	37.5	45.8	33.33
A U G U S T	1	01.8.2018	1st	5.5	4.5	4.0	7.5	8.5	9.2	7.5	10.8	40.0	55.4	56.2	57.0	16.7	33.3	41.7	37.50
	2	04.8.2018		4.7	3.5	5.5	5.5	8.3	8.5	8.2	8.2	45.7	52.3	58.7	47.4	12.5	44.6	45.8	45.83
	3	08.8.2018	2nd	5.5	5.3	6.7	6.3	7.5	8.5	7.8	9.5	54.1	49.3	48.6	63.1	16.7	12.5	54.2	37.50
	4	11.8.2018		6.7	6.3	5.8	7.0	8.7	9.8	10.8	10.7	59.9	60.4	61.2	52.6	37.5	37.5	45.8	45.83
	5	15.8.2018	3rd	3.5	4.0	6.8	5.8	5.8	7.2	12.2	7.2	63.9	55.7	53.3	56.8	50.0	41.7	33.3	29.17
	6	18.8.2018		5.5	5.3	5.5	5.5	8.2	8.7	8.0	7.5	55.1	58.9	65.9	67.8	37.5	33.3	37.5	24.17
	7	22.8.2018	4th	6.8	3.5	4.0	6.3	9.2	7.5	6.7	9.3	60.1	63.5	48.0	49.7	45.8	44.6	45.8	29.17
	8	25.8.2018		5.7	6.7	3.8	4.5	7.5	7.5	7.3	8.8	39.1	45.8	57.3	44.0	29.2	25.0	20.0	25.00
	9	29.8.2018		4.5	4.5	4.8	3.5	6.5	6.5	5.8	6.8	46.8	51.7	33.7	58.9	33.3	37.5	29.2	20.83
S E P T E M B E R	1	01.9.2018	1st	2.8	3.5	3.5	3.5	5.0	5.8	6.5	5.7	57.8	55.4	56.2	57.0	41.7	20.8	37.5	29.17
	2	05.9.2018		4.8	4.5	4.5	4.2	7.5	6.5	7.7	6.7	51.0	52.3	58.7	47.4	25.0	25.0	20.8	40.83
	3	08.9.2018	2nd	3.5	5.5	4.5	4.7	6.7	7.5	8.2	5.8	59.3	49.3	48.6	63.1	33.3	37.5	29.2	40.00
	4	12.9.2018		4.5	5.5	5.5	3.5	7.5	6.5	6.7	6.2	56.2	60.4	61.2	52.6	50.0	37.5	41.7	45.83
	5	15.9.2018	3rd	5.5	4.5	3.5	4.7	6.7	6.3	5.0	7.5	47.2	55.7	53.3	56.8	20.0	20.8	20.8	29.17
	6	19.9.2018		2.7	3.7	4.2	6.5	4.5	7.0	7.5	7.5	55.6	58.9	65.9	67.8	45.8	37.5	36.7	45.83
	7	22.9.2018	4th	3.5	4.8	5.8	3.5	4.5	7.5	7.2	6.7	50.9	63.5	48.0	49.7	33.3	33.3	37.5	37.50
	8	26.9.2018		5.5	3.5	5.2	4.7	6.5	4.8	8.2	7.5	49.9	45.8	57.3	44.0	45.8	25.0	21.9	20.83
	9	29.9.2018		4.2	4.2	3.8	5.3	7.0	7.0	4.7	6.8	36.7	51.7	33.7	58.9	41.7	16.7	19.9	29.17
Half Yearly Avg.				5.7	5.8	5.6	5.6	8.0	8.2	8.3	8.2	57.9	59.0	59.9	58.5	34.5	31.5	34.6	31.2
Half Yearly Min.				2.7	2.7	3.5	3.5	4.5	4.5	4.7	5.7	32.6	44.8	26.9	34.1	12.5	11.5	19.9	12.5
Half Yearly Max.				8.5	8.5	8.5	8.3	12.7	11.5	12.8	12.7	73.8	78.8	89.7	78.4	58.3	60.0	54.2	45.8