



JK Cement WORKS

MUDDAPUR

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

Date- 08-05-2013

No. JKCW/ENV. /E.C. (HALKI)/10/11

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

Sub: Half Yearly Environmental Clearance Compliance for the period from October-2012 to March-2013 for our Halki Lime stone mine

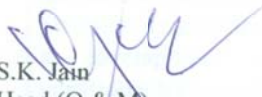
Ref: MoEF Letter No. J-11015/384/2006-1A.II (M) /dtd. 21st January 2008

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 **October-2012 to March-2013** for your kind information and record please.

Thanking you

Yours faithfully
For Halki Lime Stone Mine


S.K. Jain
Head (O & M)

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

CC: 1-The Addl. Principal Chief Conservator of Forest (C) - for kind information please

Ministry of Environment & Forest
Regional Office (South Zone), 4th floor, E&F Wings
Kendriya Sadan, 17th Main Road, IIInd 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. 32, Plot No. -33 E, Navanagar, Bagalkot (Karnataka) - 587 102



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

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

Half Yearly Compliance Report for the period from October-2012 to March-2013

Name of Project: **Halki Limestone Mine M/s J.K. Cement Limited**

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-

Sr. No.	CONDITION	Reply
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 , Land use pattern has been studied with EIA, which submitted to concerned authority. Limestone mining is being done systematically as per the IBM approved mining plan. Most sophisticated mining machineries are being deployed and highly safe methods of drilling & blasting techniques are being practiced. So, There is no damage of public building, common properties and agriculture land etc due to mining activities.
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.	Need based assessment for the nearby villages have been conducted. CSR activities and budget for it have been submitted to MoEF. We are granting funds to the nearby villages for socio-economic development. As per Annexure- 1
iii)	A no. of mining zone barrier of 50 m from the cannel passing through the lease areas on both sides shall be demarcated and the area shall be afforested with thick species of native vegetations.	Complied, A no. of mining zone barrier of 50 m from the cannel passing through the lease areas on both sides has been demarcated and the area is being

		afforested with thick species of native vegetations.
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
vi)	Measures for control and preventions of soil erosion and management of silt shall be prepared and submitted to the Regional office of the ministry within six months	Complied Details have been Submitted with REIA & EMP Report for Halki Mine Limestone Mine.
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.	Water quality is being monitored regularly and no contamination has been observed. As per Annexure-2
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.	There is no water body in and around the project area so Pisciculture is not possible.
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, it has been submitted.
x)	Occupational health and safety measures for the workers including training on malaria eradication, HIV,	Occupational health and safety measures for the workers have

	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.	been taken and different types of training are given to workers and employees. The company has engaged a full time 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 conserving by dumping it in separate dump and all along the pit boundary.water conservation poinof view we have made garland drains, trenches, and gulley checks all along the excavated pit and surrounding of OB dump connected to the main sump.
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 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.	Being Complied, The Over Burden is being scientifically stacked at earmarked dump site and vegetated with suitable native species to prevent erosion and surface run off. Only single bench of height 8mt is made in O B dump. Slope of the dump is 21 degree. Monitoring and management of plantation area are continuing. Six monthly compliance reports are being submitted to the Ministry of Environment Forests.
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	We have made garland drains all along the boundary of excavated pit & over burden dump with gulley checks and it's connected to main sump in the lower level of pit. The collected water in pit is being used for green belt development and Water spray on haul roads for controlling the fugitive dust emission. Garland drain has been designed with appropriate size. We have constructed soil bunds around the mined out area to arrest silt and

	desilted at regular intervals. Check dams and gully checks shall be constructed across nallahs (if any) flowing through the lease area.	sediments flows at the time of peak sudden rain fall. Irrigated canal passing through lease area but we have left an area of 50mt both sides of canal and both sides covered with green belt.
xiv)	Slope of mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of mines.	As per mining scheme only we are maintaining bench slope and ultimate pit slope
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.	Being done. Our Horticulture deptt. is planting number of trees every year. Plantation is being raised around the ML area, haul roads, OB dump sites etc. we are planting maximum trees. The density of the trees is not less than 2500 plants per ha. Company is involving local people for plantation programme.
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.	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 has been submitted to the Ministry in EIA which is already submitted.
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.	Rain water harvesting practices are being implemented in residential colony area and mines. Status is being reported to regional office of the Ministry.
xviii)	Prior permission from the competent authority shall be obtained for extraction of ground water, if any.	Complied
xix)	Drilling and blasting (if any) shall be conducted by using dust extractors/ wet drilling.	Wet drilling is 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	Vehicles used for transportation of ores and other mining operation have valid permission. Only driving licensed holders have given written permission to drive trucks / dumpers. The trucks are loaded with in the safe.

	transportations shall be under taken.	Transporting of ores is being done covered with a tarpaulin.
xxi)	Village roads through which transportation of ores are being carried out shall be regularly maintained by the company at its own expenses.	Being Complied
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 before closure of mines.
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.	Four Ambient Air Quality monitoring station has been established. Regular ambient air monitoring is being carried out and reports are being sent to concerned deptt.
iv)	Data on Ambient Air Quality (RSPM, SPM, SO ₂ , NO _x) 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.	Being Complied, Data on Ambient Air Quality (RSPM, SPM, SO ₂ , NO _x) are being 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. As per Annexure-3
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 by tanker.
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, ear plugs/ muffs have been provided. Noise level is well within the standard (85 dBA) in the work environment.
	Industrial waste water (Works shop and waste water	Not applicable, there is no work

vii)	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.	shop in mines area and no waste water is 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.	Personnel working in dusty areas have been provided with protective respiratory devices and training as well as information of Safety and Health aspects is given to them.
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 reporting 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.	Complying
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
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, we are giving full cooperation to the officer(s) of the Regional office by furnishing the requisite data/ information / monitoring reports.
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	Complied

	clearance letter at the Regional Office, District Industry Centre and collector's office /Tehsildar's office for 30 days.	
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

Annexure-1

CSR expenses from April-2012 to March- 2013

Pstng Date	Final Narration for Text	Amount
05.04.2012	Kallappa Sabarad for Drama Help at HebbalHelp for Drama & Jathra at Hebbal as on 05.04.2012	5000
05.04.2012	Keshappa Lamani for Durga Devi Jhatra at PetlurDurga Devi Jhatra at Petlur as on 21.03.2012	5000
05.04.2012	Jamiya Majjid Muslim Jamat (R) Asangi Misc.Kabristan land purchase in asangi village jamkhand	10000
13.04.2012	Muppinn Siddeshwar Temple Creation PetlurMuppinn Siddeshwar Temple Creation Petlur	100000
25.04.2012	Basappa Hongal Shri Chandradevi JathraShri Chandradevi Jathra Annaprasada vitran Petlur	20000
11.05.2012	Shri Dakappajanavar Devasthan Committee PetlurConstru. of Temple Dakappajanavar Devasthan Petlur	50000
15.05.2012	Vishwa Madhava Mahaparishat Mudhol Misc.programme of Darshana Bhagya of Shri Ram	38000
24.05.2012	Pradeep D. Kotale Education Fees Payment MiscEducation Fees Payment for Higher Education	10000
24.05.2012	Suprintendent of Police, Bagalkot BenevolvementPolice Benevolvement Fund Payment	25000
28.05.2012	Shri Dakappajanavar Devasthan Committee PetlurConstru. of Temple Dakappajanavar Devasthan Petlur	150000
31.05.2012	Bhimappa Kencharaddi Social DevelopmentSant Gyaneshwar Maharaj Jathra at Halki	15001
12.06.2012	N. H. Hajibhai Construction of Temple MuddapurN. H. Hajibhai Construction of Temple Muddapur	200000
14.06.2012	Shri Gururaghavendra Sadbhakta Mandali Misc.guru raghavendra & venkateshwar temple building	25000
27.06.2012	Anjuman Islam Committee Masjid ConstructionAnjuman Islam Committee Masjid Construction	50000
09.07.2012	Gramadevate Committee Jathra at Hebbal Misc.Gramdevata Jatra donation at hebbal	20000
17.07.2012	President, Govt. Urdu Lower Primary SchoolPresident, Govt. Urdu Lower Primary School	25000
17.07.2012	President, Anjuman E-Islam Committee, MuddapurAnjuman Islam Committee Masjid Construction	50000
19.07.2012	Shri Raghvendra Swami Jathra Annaprasada VitranShri Raghvendra Swami Jathra Annaprasada Vitran	15000

19.07.2012	Shri Guru Raghvendra Sadbhakta Mandali Temple Constemple Constructions at pilgrims	75000
27.07.2012	Shri Gurunath Swami Yoganand Swami Math LokapurShri Dyaneshwar Math Reconstruction Developement	50000
27.07.2012	Holebasappa G. Tulasigeri Pandurang MaharprasadShri Pandurang Dindi Utsav Mahaprasad Vitran	7000
14.08.2012	Relief Trust for Medical Treatment of Blind ChildMedical Treatment of Blind Child Hani Singh	5100
03.09.2012	Gomatesh Vidyapeeth Belgaum Miscelleniousdonation for cement for new constructed building	50000
07.09.2012	Gokarneshwar Sadbhakt Mandali Miscelleniousconstruction of annapurneshwari nilay, vajramatti	50000
19.09.2012	Kallappa H. Sabarad MiscelleniousHoly/Cultural Bhavan Opening Ceremony Hebbal 19.09	20000
28.09.2012	Director Sainik Welfare & Rehabilitation Deptt. MiscDistribution of Army Flags to celebrate Soldiers D	12150
01.10.2012	CEO-Zilla Panchayat Bagalkot Deshera Festival MiscCEO-Zilla Panchayat Bagalkot Deshera Festival Misc	25000
15.10.2012	Maruti Kariyannavar Social Development MiscellenioRe- Constructions of Allah Statue at Timmapur	10000
15.10.2012	Maruti Kariyannavar Social Development MiscellenioFor Ganesh Festival at Muddapur	2000
27.10.2012	Shri Kshetra Committee, Stavanidhi MiscelleniousParshwanath & Khsetrapal Jain Temple Re-creation	50000
29.10.2012	Saidappa H. Bhajantri Laxmi Devi Jhatra MuddapurLaxmi Devi Jhatra Annaprasad Vitran Muddapur	3000
31.10.2012	Sambhram Sourabh Social Development MiscelleniousShri Sai Gold Palace 100 Yrs. Cultural Programme	10000
31.10.2012	Saptswar Sangeet Nrutya Sanskrutik Sansthe Misc.Living & Fooding arrangement of artists	25000
15.11.2012	President S.D.M.C. School Bomman Budni Misc.S.D.M.C. School Function Pratibha Karanji Donation	10000
16.11.2012	Shree Pandurang Devasthan Committee MiscelleniousPadayatra to Shri Kshetra Pandarpur Lord Pandurang	3000
16.11.2012	Shri Kshetra Committee, Stavanidhi MiscelleniousParshwanath & Khsetrapal Jain Temple Re-creation	50000
27.12.2012	Shri Nagabhushan Devaru Hiremath MiscelleniousMath Renovation Donation Haradolli -Gulledgudda	11000
03.01.2013	Chief Executive Officer Zilla Panchayat BagalkotEducation Promotion Programme Lunch Arrangement	9000

04.01.2013	Headmaster & Secretary UBMPs Mudhol Miscellenious Educational Cultural Activities UBMPs Mudhol	25000
07.01.2013	Shri Mudhol Jain Swetamber Murti Poojak Sangh Misc Shree Sumatinath Jinalaya + Aradhana Bhavan Constr	50000
21.01.2013	Shree 1008 Adinatha Teerthankar Digambar Jain Basa Re-construction of Adinatha teerthankar Jain templ	50000
21.01.2013	Jain Basadi & Kavichakravarthi Ranna Sangha Misc. Re-construction of Kavichakravarthi Ranna Sangha	50000
23.01.2013	Nrupathunga Kala Rang Programme Miscellenious Nrupathunga Kala Rang Programme Miscellenious	10000
04.02.2013	The Secretary & Treasurer Bharat Scout & Guides Primary Teachers 100 Nos. Fooding Arrangement	10000
13.02.2013	Tavareppa K. Pujari (Lamani) Petlur Miscellenious Dakappajjanvar Murthi Sthapana 09.02.2013 Petlur	7000
06.03.2013	Sankanna R. Gangannavar Shri Lokeshwar Jathra Misc Shri Lokeshwar Jathra Lokapur 05.03.13 to 15.03.13	11000
21.03.2013	Masjid E Khalilullah Miscellenious Masjid E Khalilullah Construction of Mosque	100000
22.03.2013	Maruti Karennavar -Yamanureshwar Jatra Paid for Yamanureshwar Jatra, Muddapur	150000
30.03.2013	Shree Pandurang Rukmini Devastan Festival Petlur Festival in Hari Mandir from 05.04.13 to 08.04.13	25000
25.05.2012	12 Nos. Chairs Given to School	26399.82
11.08.2012	Sweet Distribution to School Childrens on 15.08.2012 Expenses	20000
12.11.2012	Expenses made for contribution at math Cash paid to Mr. Uday Kulkarni	12000
17.11.2012	Cement issued to jain shantgiri trust adjusted	68000
17.12.2012	T-SHIRT WITH CAP GIVEN TO RR RATI BHANDARI SCIENCE	31450
28.12.2012	Reim. of police welfare exp.	72473
04.02.2013	Breakfast of School Childrens on 26.01.2013 Republic Day Expenses	10000
05.03.2013	from Glance Vision Care Frenchisee Mr. Vittal Hosmani Foresight Opticals Purchased	990
06.03.2013	from Glance Vision Care Frenchisee Mr. Suresh Mandaganur Glass & Frame Purchased	1410
06.03.2013	from Glance Vision Care Frenchisee Mahadevi Kumbar Glass & Frame Purchased	1050
06.03.2013	from Glance Vision Care Frenchisee Miss. Vijaya Kumbar Glass & Frame Purchased	990
19.03.2013	Shri 108 Acharyaratna Deshbhushan Sansthe Misc.	5100

J.K. Cement WORKS, MUDDAPUR (KARNATAKA)**HALKI LIMESTONE MINE****AMBIENT AIR QUALITY MONITORING REPORT (SO₂, NO_x, RSPM, SPM), OCTOBER - 2012 to MARCH - 2013****(ALL VALUES IN MICROGRAMS / CUBIC METER)**

				Author:																			
Month	SL.No.	Date	We	SO ₂				NO _x				RSPM (PM 10)				SPM							
				Locations				Locations				Locations				Locations							
				A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D				
O C T O B E R	1	4/10/2012	1 st	9.7	10.8	8.7	11.3	11.2	12.3	9.7	13.2	66.5	67.9	64.4	65.6	137.4	140.0	132.5	135.3				
	2	8/10/2012		11.8	10.2	10.0	12.3	13.7	12.5	10.8	14.2	70.2	71.7	68.1	69.0	145.2	148.2	140.2	142.5				
	3	11/10/2012	2 nd	9.2	12.0	11.0	10.5	11.5	13.7	12.0	12.5	72.7	74.6	70.7	67.3	150.1	153.5	145.2	139.7				
	4	15/10/2012		11.0	10.7	9.3	10.8	12.7	11.8	10.5	13.3	68.9	70.6	66.9	63.3	142.5	145.0	138.0	130.8				
	5	18/10/2012	3 rd	11.3	10.2	10.3	12.5	13.3	12.0	11.5	14.3	73.8	68.0	70.2	67.9	152.4	140.4	144.3	139.7				
	6	22/10/2012		10.0	11.2	10.7	10.0	11.0	12.3	13.2	11.0	70.8	65.2	74.0	70.2	145.6	135.2	151.8	144.7				
	7	26/10/2012	4 th	9.2	11.0	12.0	10.3	10.2	11.8	13.7	12.7	68.3	69.2	70.9	65.6	140.9	143.1	145.5	135.6				
	8	30/10/2012		10.2	10.7	11.5	12.0	11.7	11.3	14.5	13.5	72.1	66.0	68.3	70.2	149.0	137.3	141.1	145.0				
Average				10.3	10.8	10.4	11.2	11.9	12.2	12.0	13.1	70.4	69.2	69.2	67.4	145.4	142.9	142.3	139.2				
Min				9.2	10.2	8.7	10.0	10.2	11.8	9.7	11.0	66.5	65.2	64.4	63.3	137.4	135.2	132.5	130.8				
Max				11.8	12.0	11.0	12.3	13.7	13.7	12.0	14.2	72.7	74.6	70.7	69.0	150.1	153.5	145.2	142.5				
N O V E M B E R	1	3/11/2012	1 st	10.7	12.0	9.3	11.5	12.2	13.8	10.8	12.7	70.6	71.8	65.1	69.2	145.6	147.5	133.8	141.9				
	2	7/11/2012		12.2	11.2	10.2	10.0	13.2	12.5	12.2	11.2	69.5	69.0	68.0	71.8	143.5	142.7	140.0	147.8				
	3	10/11/2012	2 nd	11.5	10.0	11.5	11.8	12.7	11.5	13.2	13.0	66.2	72.7	70.9	74.2	136.4	149.7	145.6	153.0				
	4	15/11/2012		12.5	11.7	10.0	10.5	14.5	13.2	11.2	12.2	70.4	74.9	67.7	70.9	145.4	154.0	139.6	145.7				
	5	19/11/2012	3 rd	10.7	10.7	10.2	12.3	12.2	12.3	11.8	14.5	67.3	76.1	64.3	74.0	139.2	156.6	132.7	151.7				
	6	22/11/2012		9.8	11.2	12.0	12.5	11.3	13.0	13.5	14.5	63.8	72.6	61.1	70.2	132.4	149.6	126.3	144.9				
	7	26/11/2012	4 th	10.5	12.3	10.0	12.3	12.2	14.0	10.8	14.5	68.2	70.2	64.8	72.6	141.1	144.5	132.6	149.3				
	8	29/11/2012		11.7	10.5	10.3	11.3	13.2	12.7	11.3	13.5	70.4	72.7	66.9	74.7	145.0	149.5	138.4	153.1				
Average				11.2	11.2	10.4	11.5	12.7	12.9	11.9	13.3	68.3	72.5	66.1	72.2	141.1	149.3	136.1	148.4				
Min				9.8	10.0	9.3	10.0	11.3	11.5	10.8	11.2	63.8	69.0	61.1	69.2	132.4	142.7	126.3	141.9				
Max				12.5	12.3	12.0	12.5	14.5	14.0	13.5	14.5	70.6	76.1	70.9	74.7	145.6	156.6	145.6	153.1				
D E C E M B E R	1	3/12/2012	1 st	9.7	10.3	11.7	11.0	11.7	11.2	13.0	12.3	66.4	69.2	70.9	72.2	137.0	142.1	146.0	148.9				
	2	6/12/2012		11.2	12.0	10.8	11.5	12.2	13.2	11.8	14.7	69.3	72.4	74.4	69.7	143.1	148.9	152.7	143.2				
	3	10/12/2012	2 nd	9.2	10.8	11.5	12.5	10.5	12.2	14.5	13.8	70.9	74.7	72.3	68.7	145.3	153.3	148.6	141.5				
	4	13/12/2012		11.8	9.2	11.7	11.5	13.5	10.2	13.7	12.5	73.5	71.5	74.3	70.8	151.1	147.1	153.3	145.4				
	5	17/12/2012	3 rd	11.0	10.0	12.8	11.7	11.7	11.8	14.7	12.8	69.8	68.0	71.8	67.7	143.3	139.5	147.9	139.3				
	6	20/12/2012		12.3	11.0	10.7	13.3	13.5	12.8	11.7	15.0	72.1	73.1	68.6	69.8	148.7	150.8	141.1	143.8				
	7	24/12/2012	4 th	11.7	11.5	12.5	11.0	13.0	13.5	13.8	12.7	74.3	68.6	73.3	66.1	152.9	141.1	150.6	136.1				
	8	27/12/2012		10.0	11.0	11.5	9.8	11.0	12.8	14.5	10.8	71.1	71.7	70.3	67.0	145.9	147.9	144.4	137.9				
Average				10.9	10.7	11.6	11.5	12.1	12.2	13.5	13.1	70.9	71.1	72.0	69.0	145.9	146.3	148.1	142.0				
Min				9.2	9.2	10.7	9.8	10.5	10.2	11.7	10.8	66.4	68.0	68.6	66.1	137.0	139.5	141.1	136.1				
Max				12.3	12.0	12.8	13.3	13.5	13.5	14.7	15.0	74.3	74.7	74.4	72.2	152.9	153.3	153.3	148.9				

J A N U A R Y	1	3/1/2013	1 st	10.2	10.8	9.5	10.2	11.5	13.2	10.5	12.8	71.9	70.7	62.5	60.1	148.2	145.2	128.8	125.7
	2	7/1/2013		12.2	12.0	10.5	13.7	13.5	14.3	11.8	15.2	69.1	68.8	67.4	63.0	142.1	141.8	138.9	132.8
	3	10/1/2013	2 nd	11.0	12.8	9.3	12.0	13.0	15.0	10.7	13.8	65.8	66.4	61.4	66.1	135.9	137.0	126.8	137.5
	4	14/1/2013		10.5	11.5	8.7	11.7	11.7	13.2	9.7	13.8	62.3	63.0	65.1	67.7	128.3	130.2	133.9	139.4
	5	17/1/2013	3 rd	10.8	9.7	10.0	12.5	12.0	10.8	11.2	14.8	65.3	60.3	62.6	64.0	134.3	124.0	128.5	131.8
	6	21/1/2013		11.0	11.7	12.0	11.2	13.3	12.8	13.5	13.2	67.9	64.2	66.1	61.1	139.7	132.3	136.7	126.6
	7	24/1/2013	4 th	10.0	10.8	11.8	10.7	12.3	12.2	12.5	12.7	64.4	61.0	63.1	58.3	133.4	128.7	129.9	120.9
	8	29/1/2013		11.0	10.5	12.2	11.7	13.2	11.2	13.8	13.5	60.9	63.0	59.4	62.3	126.1	130.5	122.2	128.8
Average				10.8	11.2	10.5	11.7	12.6	12.8	11.7	13.7	66.0	64.7	63.4	62.8	136.0	133.7	130.7	130.4
Min				10.0	9.7	8.7	10.2	11.5	10.8	9.7	12.7	60.9	60.3	59.4	58.3	126.1	124.0	122.2	120.9
Max				12.2	12.8	12.2	13.7	13.5	15.0	13.8	15.2	71.9	70.7	67.4	67.7	148.2	145.2	138.9	139.4
F E B R U A R Y	1	1/2/2013	1 st	11.2	9.2	11.7	12.2	13.0	11.2	13.7	14.2	64.3	70.3	65.1	63.6	132.6	145.0	133.5	130.5
	2	5/2/2013		10.2	10.8	11.5	11.0	11.7	13.0	14.7	13.0	61.1	66.2	62.1	67.4	126.1	136.4	128.6	138.1
	3	8/2/2013	2 nd	11.3	10.8	10.0	9.2	12.7	11.7	11.2	10.7	63.5	62.5	58.8	64.2	130.3	128.8	121.1	132.4
	4	12/2/2013		11.8	11.3	13.2	11.0	12.8	12.5	14.2	12.8	58.7	65.2	61.5	60.4	122.6	134.1	127.2	124.7
	5	15/2/2013	3 rd	12.7	10.5	10.8	10.7	13.8	12.0	13.7	12.2	62.4	60.4	64.0	63.4	128.2	124.4	131.9	130.3
	6	19/2/2013		11.3	12.2	11.2	12.3	13.0	13.7	12.7	13.5	65.4	63.5	66.9	68.4	135.2	130.6	138.2	140.7
	7	22/2/2013	4 th	12.0	11.0	12.2	10.7	14.0	12.2	14.0	11.7	67.6	67.1	65.3	64.1	139.5	137.9	134.0	132.4
	8	26/2/2013		9.5	11.7	11.5	9.5	11.0	12.8	13.5	10.3	63.0	64.2	68.1	60.2	130.2	132.0	139.8	125.2
Average				11.3	10.9	11.5	10.8	12.8	12.4	13.4	12.3	63.2	64.9	64.0	64.0	130.6	133.6	131.8	131.8
Min				9.5	9.2	10.0	9.2	11.0	11.2	11.2	10.3	58.7	60.4	58.8	60.2	122.6	124.4	121.1	124.7
Max				12.7	12.2	13.2	12.3	14.0	13.7	14.7	14.2	67.6	70.3	68.1	68.4	139.5	145.0	139.8	140.7
M A R C H	1	2/3/2013	1 st	11.2	10.8	11.2	10.8	12.3	12.2	11.7	13.2	64.1	66.4	67.1	62.5	132.3	136.3	138.3	129.1
	2	6/3/2013		11.7	9.7	9.7	10.5	13.3	11.0	10.8	12.5	67.3	62.9	69.7	59.8	138.2	130.2	143.4	122.9
	3	9/3/2013	2 nd	11.0	11.3	10.5	11.7	12.8	12.8	12.0	12.8	62.7	60.3	65.6	64.2	129.8	124.3	135.8	132.5
	4	13/3/2013		10.7	12.3	11.7	10.3	12.5	13.5	13.0	13.3	60.7	64.2	63.2	68.2	125.7	132.1	129.7	139.7
	5	16/3/2013	3 rd	11.8	10.7	12.3	12.2	13.3	12.0	13.5	14.0	64.3	67.2	60.5	62.4	132.6	138.6	124.6	128.7
	6	20/3/2013		12.7	12.7	11.0	13.2	14.2	13.5	12.0	14.7	61.3	62.9	58.0	66.1	126.6	129.7	120.2	136.2
	7	23/3/2013	4 th	10.8	11.2	12.0	13.0	12.5	12.7	13.7	14.8	65.3	67.9	61.6	70.1	134.7	139.5	127.5	143.3
	8	28/3/2013		11.8	11.2	12.8	11.8	13.3	12.7	15.0	13.0	62.3	63.9	64.9	73.1	129.0	131.7	134.1	148.2
Average				11.5	11.2	11.4	11.7	13.0	12.5	12.7	13.5	63.5	64.5	63.8	65.8	131.1	132.8	131.7	135.1
Min				10.7	9.7	9.7	10.3	12.3	11.0	10.8	12.5	60.7	60.3	58.0	59.8	125.7	124.3	120.2	122.9
Max				12.7	12.7	12.8	13.2	14.2	13.5	15.0	14.8	67.3	67.9	69.7	73.1	138.2	139.5	143.4	148.2
Half Yearly Average				11.0	11.0	11.0	11.4	12.5	12.5	12.5	13.2	67.1	67.8	66.4	66.9	138.3	139.8	136.8	137.8

J.K. Cement WORKS, MUDDAPUR (KARNATAKA)

(Unit: J.K. Cement)

Fugitive Emission Monitoring Report of Halki mine for the month of October-2012 to March-2013

SL. NO.	MONTH/YEAR	SPM ($\mu\text{g}/\text{m}^3$)				
		Loading Area	Drilling Area	Haulage Area	Waste Dumping Site	Service Road
1	Oct-12	1122.4	1039.2	1056.2	968.0	802.7
2	Nov-12	974.0	834.8	950.0	820.5	842.9
3	Dec-12	842.8	914.1	898.4	854.4	954.1
4	Jan-13	981.0	929.3	841.8	846.0	920.0
5	Feb-13	848.4	884.5	978.9	921.7	869.6
6	Mar-13	1002.8	1034.2	795.8	875.6	981.7
Half yearly average=		961.9	939.4	920.2	881.0	895.2