

**JK Cement WORKS**

**MUDDAPUR**

(Unit : J. K. Cement Ltd.)

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Dist. Bagalkot (Karnataka) India

No. JKCW/ENV. /E.C. (MUDDAPUR)/08/20

Date- 25-05-2018

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

**Sub: Half Yearly Environmental Clearance Compliance for the period from October-2017 to March-2018 for our Muddapur Limestone Mine**

Ref: MoEF Letter No. J-11015/383/2006-1A.II (M) /dtd. 21st January 2008

Dear Sir,

With reference to your above cited environmental clearance letter of our Muddapur Lime stone mine. We are sending here with enclosed point wise compliance for the period from **October-2017 to March-2018** for your kind information and record please.

Thanking you

Yours faithfully  
For Muddapur Lime Stone Mine

RBM Tripathi  
(Unit Head)

Encl. - Compliance report, Socio-economic development report, six monthly ambient air quality monitoring, fugitive emission, water testing, noise monitoring report, Environmental expenditure report

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, 7<sup>th</sup> D Cross, Shivanagar, Opp. Pushpanjali Theatre, Bengaluru
- 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 Office :**

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E-mail : admin@jkcements.com  
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**Central Marketing Office :**

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**Muddapur Limestone Mine, Village- Muddapur, Taluk- Mudhol, Distt.-Bagalkot, Karnataka**

Ref: - MoEF Letter No. J-11015/383/2006-1A.II (M) /dtd. 21st January 2008

**Half Yearly Compliance Report for the period from October-2017 to March-2018**

EC to Muddapur Limestone Mine (ML area 161.87 ha and 2.0 MTPA of limestone Production) at village Muddapur, in Mudhol Taluk, Bagalkot, Distt. in Karnataka

**Specific Conditions**

| Sr. No. | Condition                                                                                                                                                                                                                                                                                                                                                                                              | Reply                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)    | 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                                                                                                                                                                                                                                                                                                                                                                                                                     |
| iv)     | Conservation plan for wild life shall be prepared in consultation 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.                                                                                                                                                                                                                                                                                                                                                                     |
| v)      | 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. Soil erosion control measures have been mentioned in EIA which is already submitted to MoEF.                                                                                                                                                                                                                                                                                                                             |
| vi)     | 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                                                     | Complying. Water quality is being monitored regularly and no contamination has been observed.                                                                                                                                                                                                                                                                                                                                      |



**Muddapur Limestone Mine, Village- Muddapur, Taluk- Mudhol, Distt.-Bagalkot, Karnataka**

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**Half Yearly Compliance Report for the period from October-2017 to March-2018**

|       | months.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vii)  | Water bodies shall be developed and utilized to developed 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.                                                                                                                                                                                              |
| Viii) | 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.                                                                                                                                                                                                                                                                                               |
| ix)   | 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. |
| x)    | 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 at present, No solid waste is generated.                                                                                                                                                                                                                                  |
| xi)   | 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.           | Will be complied. Presently, there are no over burden dump within the lease area. Compliance report is being submitted to the ministry of environment and forest on six monthly basis.                                                                                                                                            |
| xii)  | 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                                                                                                                                                                                                                                                                                                                                                               | Complying. Garland drains have been made around the pit.<br>The collected water in the pit is being used for green belt development and water spray on haul roads for controlling fugitive                                                                                                                                        |



**Muddapur Limestone Mine, Village- Muddapur, Taluk- Mudhol, Distt.-Bagalkot, Karnataka**

Ref: - MoEF Letter No. J-11015/383/2006-1A.II (M) /dtd. 21st January 2008

**Half Yearly Compliance Report for the period from October-2017 to March-2018**

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                  |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | 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 and maximum discharge in the area adjoining the mine site. Sump capacity will also provide adequate retention period to allow proper settling silt materials. Sedimentation pits shall be constructed at the corners of the garland drains and de-silted at regular intervals. Check dams and gully checks shall be constructed across nallahs (if any) flowing through the lease area. | dust emission. There is no nallahs within the lease area.                                                                                                                                                        |
| xiii)  | 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.                                                                                  |
| xiv)   | Green Belt Development shall be carried out considering CPCB guidelines including selection of plant 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.                                                                                    |
| xv)    | 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.                                                                         |
| xvi)   | The project authority shall implement suitable conservation measures to augment ground water resources 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.                                                                                     |
| xvii)  | 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 is fulfilled with mine pit rain water.                                                                                                  |
| xviii) | 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                                                                                                                                                                                                                                                                                                         | 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 |



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**Half Yearly Compliance Report for the period from October-2017 to March-2018**

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                       |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | enclosures so that no dust particles /fine matters escape during the course of transportation. No overloading of ores for transportations shall be under taken.                                                                                                                                                                                                                                                                                   | occurred during transportation.                                                                                                                       |
| xix)     | Drilling and blasting (if any) shall be conducted by using dust extractors/ wet drilling.                                                                                                                                                                                                                                                                                                                                                         | Complying. Wet drilling is Being done.                                                                                                                |
| xx)      | 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. |
| xxi)     | 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>B</b> | <b>General Condition:</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                       |
| 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 <sub>2</sub> , NO <sub>x</sub> 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 <sub>2</sub> , No <sub>x</sub> ) 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 and regularly sent to concerned departments. A copy attached as <b>an annexure no. II</b>                                              |
| 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 ,                                                                                                                                                                                                                                                           | Not applicable, there is no workshop in mines area and no waste water discharged from mines.                                                          |



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**Half Yearly Compliance Report for the period from October-2017 to March-2018**

|       |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | 1993 and 31st December 1993 or as amended from time to time. Oil and Grease trap shall be instilled before discharge of effluents.                                                                                                                                      |                                                                                                                                                                                               |
| 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.                                                                                                                                                                                     |
| 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 Newspapers 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              | Complied.                                                                                                                                                                                     |

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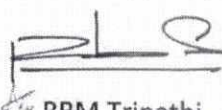
**Half Yearly Compliance Report for the period from October-2017 to March-2018**

|                                                                                                                                                                                                                                                                                                                                                                      |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| accorded Environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site pf the Ministry of the Environment & Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> and a copy of the same shall be forwarded to the Regional Office of the Ministry located at Bangalore . |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

We hope, you will find our reply in order.

Thanks with regards,

Yours faithfully  
For Muddapur Lime Stone Mine

  
RBM Tripathi  
(Unit Head)



**Social Development Expenses for the period from October 2018 to March 2018**

| S.No. | Subject                                            | Amount (Rs.)       |
|-------|----------------------------------------------------|--------------------|
| 1     | Sir Padampat Primary School Salary October 2017    | 1,65,000.0         |
| 2     | Sir Padampat Primary School Salary                 | 20,000.0           |
| 3     | Sir Padampat Primary School Salary                 | 1,72,000.0         |
| 4     | Sir Padampat Primary School Salary December 2017   | 1,72,000.0         |
| 5     | Sir Padampat Primary School Salary January 2018    | 1,72,000.0         |
| 6     | WHITEWASHING ON NEW SURFACE                        | 5,870.7            |
| 7     | LOKAPUR TEMPLE WORK                                | 16,027.0           |
| 8     | EXP AGST SWACH PAKHWADA AT HALKI MINES             | 14,489.0           |
| 9     | EARTH FILLING(AVAILABLE EARTH)                     | 20,768.0           |
| 10    | RCC 1:2:4 RAFT, FOUNDATION                         | 1,55,052.0         |
| 11    | STONE SOLING                                       | 15,694.0           |
| 12    | SCHOOL WRITING GREEN BOARD FOR HALKI SCHOOL        | 20,586.0           |
| 13    | HP COMPUTER ,DVD WRITER EXTERNAL FOR SCHOOL        | 71,643.0           |
| 14    | CANON ALL IN ONE 3010 PRINTER FOR SCHOOL           | 12,307.0           |
| 15    | COMPUTER TABLE,CHAIR FOR SCHOOL ADJUSTED           | 16,000.0           |
| 16    | stamp program tb association                       | 2,000.0            |
| 21    | Padayatra to Shri Kshetra Pandarpur Lord Pandurang | 4,000.0            |
| 22    | Shri Kashilingeshwar Jathra 30.04.17 to 02.05.17   | 1,10,000.0         |
| 23    | Karnataka Rajostava by Karnataka Raksahna Vedike   | 25,000.0           |
| 24    | Koti Japyatna Programme & Vedant Mahotsav          | 40,000.0           |
| 25    | Mudhol Mahila Credit Souhard Sahakari Ltd. Program | 1,50,000.0         |
| 26    | Paid for Yamanureshwar Jatra, Muddapur             | 2,00,000.0         |
| 27    | Pandurang Rukmini Devasthan Jathra Annaprasad      | 25,000.0           |
| 28    | Durga Devi Jathra Mahotsav Petlur 16-20 March 18   | 75,000.0           |
| 29    | Paid for Revayya Shivayogi Math Jatra, Hebbal      | 15,000.0           |
| 30    | Muppin Siddeshwar Jhatra Petlur 30.03.18-01.04.18  | 35,000.0           |
| 31    | Muddapur Limestone Mines Swachhta Pakhwada 2017    | 15,185.0           |
| 32    | Basavaraj Horaddi International Athletics Help     | 35,000.0           |
| 33    | 22nd National Road Cycling Championships Jamkhandi | 1,00,000.0         |
| 34    | SHANKAR NAIK PETLUR                                | 25,000.0           |
| 35    | Sponsorship for Cricket Players from 26.01.2018    | 11,000.0           |
| 36    | Sponsorship for 10 KM Marathon 2018 @ Bagalkot     | 15,000.0           |
| 37    | Sponsorship for National Level Karate & Teakwando  | 2,00,000.0         |
|       | <b>Total</b>                                       | <b>21,31,621.7</b> |



**MUDDAPUR LIMESTONE MINES, (KARNATAKA)**

(Unit:  $\mu\text{g}/\text{m}^3$ )

**HALF YEAR AAQM REPORT ( $\text{SO}_2$ ,  $\text{NO}_2$ ,  $\text{PM}_{10}$ ,  $\text{SPM}$ ) FROM OCTOBER-2017 TO MARCH-2018**

(ALL VALUES IN MICROGRAMS / CUBIC METER)

| Month            | Sl No. | Date       | Week | $\text{SO}_2$ |     |      |     | $\text{NO}_2$ |      |      |      | $\text{PM}_{10}$ |      |      |      | $\text{SPM}$ |       |        |        |
|------------------|--------|------------|------|---------------|-----|------|-----|---------------|------|------|------|------------------|------|------|------|--------------|-------|--------|--------|
|                  |        |            |      | Locations     |     |      |     | Locations     |      |      |      | Locations        |      |      |      | Locations    |       |        |        |
|                  |        |            |      | A             | B   | C    | D   | A             | B    | C    | D    | A                | B    | C    | D    | A            | B     | C      | D      |
| 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 | 138.4        | 149.7 | 141.76 |        |
|                  | 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  | 151.99 |
|                  | 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  | 147.49 |
|                  | 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  | 144.94 |
|                  | 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  | 157.64 |
|                  | 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  | 153.73 |
|                  | 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  | 163.11 |
|                  | 8      | 30.10.2017 |      | 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  | 163.14 |
| NOVEMBER         | 1      | 2.11.2017  | 1st  | 5.5           | 6.2 | 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  | 154.18 |
|                  | 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  | 168.40 |
|                  | 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  | 162.69 |
|                  | 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  | 172.49 |
|                  | 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  | 158.04 |
|                  | 6      | 20.11.2017 |      | 6.5           | 6.7 | 6.0  | 8.2 | 7.5           | 12.5 | 7.0  | 9.0  | 39.1             | 41.4 | 45.3 | 41.6 | 167.2        | 152.8 | 152.9  | 147.44 |
|                  | 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  | 157.82 |
|                  | 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  | 165.34 |
|                  | 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  | 162.90 |
| 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  | 151.56 |
|                  | 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  | 169.50 |
|                  | 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  | 162.75 |
|                  | 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  | 160.84 |
|                  | 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  | 157.23 |
|                  | 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  | 160.37 |
|                  | 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  | 157.75 |
|                  | 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  | 158.15 |
|                  | 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  | 165.60 |
| 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  | 160.42 |
|                  | 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  | 164.48 |
|                  | 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  | 159.01 |
|                  | 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  | 152.33 |
|                  | 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  | 151.62 |
|                  | 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  | 160.90 |
|                  | 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  | 159.96 |
|                  | 8      | 27.1.2018  |      | 3.5           | 5.7 | 6.0  | 7.5 | 4.5           | 7.0  | 8.5  | 8.7  | 39.9             | 52.8 | 57.9 | 67.5 | 164.4        | 161.1 | 163.9  | 171.00 |
|                  | 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  | 173.67 |
| 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  | 174.94 |
|                  | 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  | 183.46 |
|                  | 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  | 168.92 |
|                  | 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  | 152.90 |
|                  | 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  | 170.49 |
|                  | 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  | 165.96 |
|                  | 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  | 172.12 |
|                  | 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  | 161.32 |
| 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  | 166.22 |
|                  | 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  | 162.15 |
|                  | 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  | 168.21 |
|                  | 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  | 168.68 |
|                  | 5      | 15.3.2018  | 3rd  | 5.3           | 6.0 | 6.0  | 5.5 | 6.7           | 7.3  | 7.5  | 6.7  | 60.8             | 63.5 | 61.7 | 57.6 | 167.3        | 174.0 | 165.1  | 166.84 |
|                  | 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  | 166.20 |
|                  | 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  | 158.83 |
|                  | 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  | 167.00 |
|                  | 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  | 175.69 |
| Half Yearly Avg. |        |            |      | 6.2           | 6.8 | 6.6  | 6.6 | 8.1           | 8.2  | 8.0  | 8.4  | 57.9             | 55.6 | 55.3 | 57.3 | 164.3        | 162.3 | 163.5  | 161.9  |
| Half Yearly Min. |        |            |      | 2.8           | 5.0 | 4.7  | 5.3 | 4.5           | 6.3  | 5.3  | 6.3  | 31.0             | 29.5 | 35.1 | 41.6 | 139.2        | 137.3 | 142.9  | 141.8  |
| Half Yearly Max. |        |            |      | 11.7          | 9.2 | 11.0 | 8.5 | 15.8          | 12.5 | 13.5 | 13.0 | 81.0             | 71.2 | 69.6 | 76.0 | 187.9        | 189.6 | 178.8  | 183.5  |

## Muddapur Limestone Mines, (Karnataka)

(Unit of J.K. Cement Ltd.)

### PM 2.5 MONITORING REPORT FROM OCTOBER-2017 TO MARCH-2018

| Site          | Month  | Date       | Monitoring Location | Parameter PM 2.5 (µg/m <sup>3</sup> ) |
|---------------|--------|------------|---------------------|---------------------------------------|
| MUDDAPUR MINE | 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 MINE | 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 MINE | Dec-17 | 4.12.2017  | A                   | 34.8                                  |
|               |        | 5.12.2017  | B                   | 32.1                                  |
|               |        | 6.12.2017  | C                   | 38.5                                  |
|               |        | 7.12.2017  | D                   | 41.6                                  |
| MUDDAPUR MINE | 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 MINE | 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 MINE | 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       |        |            |                     | 42.5                                  |
| Average       |        |            |                     | 35.425                                |



**MUDDAPUR LIME STONE MINES, (KARNATAKA)**

**(Unit : J.K. Cement Ltd.)**

**Half yearly Fugitive Emission Monitoring Report of Muddapur mines for the month of October-2017 to March-2018**

| Sl. No. | MONTH/YEAR | SPM ( $\mu\text{g}/\text{m}^3$ ) |               |              |                    |              |
|---------|------------|----------------------------------|---------------|--------------|--------------------|--------------|
|         |            | Loading Area                     | Drilling Area | Haulage Area | Waste Dumping Site | Service Road |
| 1       | Oct-17     | 596.32                           | 654.01        | 710.70       | 696.88             | 571.69       |
| 2       | Nov-17     | 696.86                           | 560.42        | 584.20       | 595.44             | 659.41       |
| 3       | Dec-17     | 465.28                           | 519.41        | 534.90       | 577.12             | 622.51       |
| 4       | Jan-18     | 500.87                           | 535.59        | 523.61       | 536.10             | 597.22       |
| 5       | Feb-18     | 437.42                           | 715.81        | 511.09       | 608.44             | 635.86       |
| 6       | Mar-18     | 615.21                           | 613.70        | 652.50       | 516.30             | 474.29       |
|         | Minimum    | 437.42                           | 519.41        | 511.09       | 516.30             | 474.29       |
|         | Maximum    | 696.86                           | 715.81        | 710.70       | 696.88             | 659.41       |
|         | Average    | 551.99                           | 599.82        | 586.16       | 588.38             | 593.50       |

## Muddapur Limestone Mines (Karnataka)

(Unit: J.K. Cement Ltd.)

Noise monitoring report of Muddapur mines (Core zone) for the month of October-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 |
|---------|-------|--------|-------------------------|-----------------------|------------------------------|-----------------------------------|-----------------------------|
| 1       | Day   | Oct-17 | 42.5                    | 38.6                  | 40.8                         | 42.7                              | 40.2                        |
|         | Night |        | 33.6                    | 27.5                  |                              | 34.6                              | 30.8                        |
| 2       | Day   | Nov-17 | 44.8                    | 40.4                  | 38.6                         | 41.7                              | 36.8                        |
|         | Night |        | 32.5                    | 26.8                  |                              | 33.7                              | 31.6                        |
| 3       | Day   | Dec-18 | 45.8                    | 42.8                  | 37.4                         | 40.2                              | 36.8                        |
|         | Night |        | 31.6                    | 28.8                  |                              | 34.7                              | 30.6                        |
| 4       | Day   | Jan-18 | 45.6                    | 41.5                  | 42.8                         | 45.2                              | 43.6                        |
|         | Night |        | 34.6                    | 32.5                  |                              | 30.5                              | 32.8                        |
| 5       | Day   | Feb-18 | 42.6                    | 40.8                  | 41.2                         | 44.8                              | 46.5                        |
|         | Night |        | 33.5                    | 32.8                  |                              | 35.2                              | 36.1                        |
| 6       | Day   | Mar-18 | 42.7                    | 40.2                  | 39.6                         | 45.5                              | 48.7                        |
|         | Night |        | 30.5                    | 31.8                  |                              | 35.6                              | 36.2                        |
| Average | Day   |        | 44.00                   | 40.72                 | 40.07                        | 43.35                             | 42.10                       |
|         | Night |        | 32.72                   | 30.03                 |                              | 34.05                             | 33.02                       |
| Minimum | Day   |        | 42.50                   | 38.60                 | 37.40                        | 40.20                             | 36.80                       |
|         | Night |        | 30.50                   | 26.80                 | 0.00                         | 30.50                             | 30.60                       |
| Minimum | Day   |        | 45.80                   | 42.80                 | 42.80                        | 45.50                             | 48.70                       |
|         | Night |        | 34.60                   | 32.80                 | 0.00                         | 35.60                             | 36.20                       |



# MUDDAPUR LIMESTONE MINES, (KARNATAKA)

(Unit: J.K. Cement Ltd.)

Water analysis report of Core and Buffer Zone for the month of October -2017 to March-2018

| Sample collected from   |                        | TEST REPORT     |                    |                |           |             |           |           |           |             |           |
|-------------------------|------------------------|-----------------|--------------------|----------------|-----------|-------------|-----------|-----------|-----------|-------------|-----------|
| Core Zone & Buffer Zone |                        | Desirable Limit | Core Zone          |                |           | Buffer Zone |           |           |           |             | Thimmapur |
| Sl. No.                 | Constituents           |                 | Muddapur mines pit | Muddapur mines | Muddapur  | Pettur      | Metgud    | Halki     | Ningapur  | Bamanbudini |           |
| 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             | 138.65             | 137.32         | 132.17    | 135.67      | 132.77    | 137.93    | 139.97    | 141.17      | 137.98    |
| 4                       | Turbidity              | 5 NTU           | 1.58               | 1.53           | 1.48      | 1.53        | 1.48      | 1.58      | 1.62      | 1.43        | 1.57      |
| 5                       | pH                     | 6.5-8.5         | 7.35               | 7.42           | 7.20      | 7.22        | 7.32      | 7.57      | 7.60      | 7.43        | 7.27      |
| 6                       | Total Hardness         | 300             | 160.03             | 152.67         | 148.48    | 149.82      | 143.85    | 142.38    | 153.32    | 151.68      | 124.08    |
| 7                       | Calcium                | 75              | 25.37              | 26.60          | 23.00     | 26.57       | 29.45     | 28.73     | 30.93     | 26.55       | 29.93     |
| 8                       | Magnesium              | 30              | 13.78              | 11.83          | 11.73     | 12.50       | 12.18     | 12.72     | 12.95     | 12.50       | 12.92     |
| 9                       | Alkalinity             | 200             | 102.47             | 109.72         | 107.97    | 121.80      | 113.97    | 114.28    | 119.35    | 110.88      | 111.17    |
| 10                      | Chloride               | 250             | 154.70             | 151.78         | 152.20    | 151.25      | 146.47    | 151.32    | 145.17    | 146.70      | 152.72    |

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

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

**Environmental Expenditure for Muddapur Limestone Mine for Period October, 2017 to March, 2018**

| Sl. No. | Particulars          | Cost (In Rs.)    |
|---------|----------------------|------------------|
| 1       | Pollution control    | 1173800          |
| 2       | Pollution Monitoring | 177504           |
| 3       | Occupational Health  | 70000            |
| 4       | Green belt           | 69100            |
| 5       | Reclamation          | 30000            |
| 6       | Others               | Nil              |
|         | <b>Total</b>         | <b>15,20,404</b> |