JK Cement Works, Muddapur
A Unit of JK Cement Ltd.
CIN : L17229UP1994PLC017199
Works : P.O. Muddapur - 587 122 Distt. Bagalkot (Karnataka) India
+91 - 8350-289954, 289607
factory.muddapur@jkcement.com
www.jkcement.com

No.JKCW/ENV/2024/ EC Compliance/1st Half(MINE)/93/19 Date – 27-11-2024

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

Sub: **Half Yearly Environmental Clearance Compliance report for the period from April-2024 to Sept-2024 (1st Half) for Halki Limestone Mine, Village- Halki, Taluka- Mudhol, District- Bagalkot (Karnataka).**

Ref: **MoEF Letter No. J-11015/384/2006-1A.II(M), dtd.21-01-2008.**

Dear Sir,

With reference to aforesaid subject and reference matter, we are here by sending the enclosed pointwise environmental clearance compliance report for the period **April-2024 to Sept-2024 (1st Half)** of **Halki Limestone Mine** (Limestone production of 2 MTPA) Village-Halki, Taluka-Mudhol, District-Bagalkot, Karnataka.

This for your kind perusal and acknowledge the receipt

Thanking you

Yours faithfully
For Halki Limestone Mine

Prabhat Singh Parihar
(Unit Head)

Encl. – A- EC Compliance Report **Annexure-1**

a. Ambient Air Quality Monitoring– **Annexure -2**
b. Fugitive emission Monitoring - **Annexure -3**
c. Noise Level Monitoring– **Annexure -4**
d. Mines Water Analysis Report – **Annexure- 5**
e. Environmental expenditure- **Annexure-6**
f. CSR Report-**Annexure-7**

CC:

1- The Addl. Principal Chief Conservator of Forest (C), Ministry of Environment & Forest, Regional Office (South Zone), 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, 7thD 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, Bagalkot – 587102

Halki Limestone Mine(2344(A), Village- Halki, Taluk- Mudhol, Dist.- Bagalkot, Karnataka

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

EC Compliance Report of Halki Limestone Mine (ML area 124.24 ha & 2.0 MTPA of limestone Production) of M/s J.K Cement Ltd., at village Halki, in Mudhol Taluk, Bagalkot, Dist. (Karnataka) for the Period **April 2024 to September 2024**

S.No	Condition	Compliance status
A.	**Specific Conditions**	
i)	Land use patterns of nearby villages 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 months. Annual status of implementation of the plan and expenditure thereon shall be reported to the regional office of the ministry.	Compiled. It has been studied with the EIA which was 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. Environmental expenditure is attached as **Annexure-6**
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, surrounding village people are sustaining their lively hood in this project. The literacy rate and living standards enhanced due to increased earning capacity of villagers, better medical facility, transportation and communication facilities. For socio economic development we have allocated funds to the nearby villagers. A copy of CSR activities enclosed as **Annexure-7.**
iii)	A no 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 vegetation.	Complied. In mining zone barrier of 50 m from the channel passing through the lease areas on both sides has been demarcated and afforested with local species like Neem, Tapasi, and Gulmohar. It is also planned to shift the canal outside the lease area.
iv)	Recommendations of NEERI, Nagpur, as mentioned in their report on status of Environment –"Action plan " for the State of Karnataka, as applicable to this project, shall be reported to the Regional office of the Ministry.	Not Applicable. As per the email communication, dated 15.12.2009 with NEERI director, NEERI has not prepared any report on status of Environment- "Action plan" for state of Karnataka.
v)	Conservation plan for wild life shall be prepared in consultation of with the Chief wild life warden and shall be implemented within six months. Necessary allocation of fund for implementation of the same and the status of implementation of the plan shall be reported to the regional office of the Ministry.	Not Applicable. As there is no forest area nearby mining lease, however we had submitted an application to forest department on 25.08.2007. Branch forest office, Lokapur had inspected the site on 27.08.2007 and

		submitted a letter to zonal forest office, Mudhol on 28.08.2007 and zonal forest office Mudhol had submitted report to Deputy conservator of forest, Bagalkot Division, Bagalkot on dated 28.08.2007, detailed report states that there is no schedule- 1 Species available in 10 KM radius area, hence conservation plan for wildlife is 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	Compiled. Soil erosion control measures have been mentioned in EIA which is already submitted to MOEF.
vii)	Water quality both for surface as well as ground water in the core zone shall be regularly monitored for contamination due to mining activity and records maintained. In case contamination is observed, measures for control and action taken shall be reported to the State Government as well as the Regional Office of the Ministry within six months.	Complying. Water quality is being monitored regularly and no contamination is observed. Water quality reports of surface (mine pit) as well as ground water in the core zone is attached as **Annexure-5**
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.	Noted. During final closure of mine, Mining pit will be developed as water body and to be utilized to develop Pisciculture.
ix)	Action taken report on issues raised during the public hearing shall be submitted to the Ministry and the State Governments within six months.	Complied and it has been submitted.
x)	Occupational health and safety measures for the workers including training on malaria eradication, HIV, health effects on exposure to mineral dust etc. shall be carried out. The company shall engage a full time doctor who is trained in occupational health	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

	surveillance. Records of the health of the workers shall be maintained.	company has engaged fulltime doctor who is trained in Occupational health surveillance. Records are being maintained.
xi)	Top soil/solid waste(if any) shall be stacked properly with proper slope and adequate safe guards and shall back filled for reclamation and rehabilitation of the mined area	Complying. Top soil is being utilized for plantation and solid waste is being stacked properly with proper slope and adequate safe guards have been provided.
xii)	Over burden if any shall be stacked at earmarked dump site(s) only and shall not be kept active for long period. The maximum height of the dump shall not be exceed 30m, each stage shall preferably be of 10m and overall slope of the dump shall not 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.	Complying. Over burden is being stacked at earmarked dump site as planned in mining plan. Presently, dumps are active. After completion of dumps, planation will be done. Presently dump height is 18 meter with two stages and overall slope is maintained less than 28°. The OB dump is being scientifically vegetated with suitable native species to prevent erosion and surface run off. Compliance report is being submitted to the Ministry of Environment and Forest on six monthly basis.
xiii)	Garland drains shall be constructed to arrest silt and sediment flows from soil, and mineral dumps. The water so collected shall be utilized for watering the mine areas, roads, green belt development etc. The drains shall be regularly de-silted particularly after monsoon and maintained properly. Garland drain of appropriate size, gradient and length shall be designed keeping 50% safety margin over and above peak sudden rain fall (based on 50 years' data) and maximum discharge in the area adjoining the mine site. Sump capacity will also provide adequate retention period to allow proper settling of silt materials. Sedimentation pits shall be constructed at the corners of the garland drains and desilted at regular intervals. Check dams and gully checks shall be constructed across nallahs (if any) flowing through the lease area.	Complying. Garland drains have been made around dumps and pit. The collected water in the pit is being used for green belt development and spraying on haul roads for controlling fugitive dust emission. There is no nallah within the lease area.
xiv)	Slope of mining bench and ultimate pit limit shall be as per the mining scheme approved by Indian Bureau of mines.	Complying. Slope of mining bench and ultimate pit limit are followed as per the mining plan approved by Indian Bureau of mines.

xv)	Green Belt Development shall be carried out considering CPCB guidelines including selection of plan species and in consultation with DFO. Herbs, shrubs shall also form a part of a forestation programme besides tree plantation. Plantation shall be raised in 22.0 ha around the ML area, haul roads, OB dump sites etc. the density of the trees shall be not less than 2500 plants per ha. The company shall involve local people with the help of self help group for plantation programme.	Complying. Green Belt Development is being done with native species and in consultation with DFO as committed in the Mining plan.
xvi)	Details of the year wise afforestation programme 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.	Compiled. Details of the year wise afforestation programme are already submitted to MoEF and plantation is being done as per mining plan.
xvii)	The project authority shall implement suitable conservation measures to augment ground water resource in the areas in consultation with the Regional Director, Central Ground Water Board. Status of implementation shall be reported to the regional office of the Ministry from time to time.	Complying. Surface/rain water harvested in the pit recharges ground water as water percolates down wards due to inclined strata.
xviii)	Prior permission from the competent authority shall be obtained for extraction of ground water, if any.	Compiled. Prior permission taken from Karnataka Ground water authority for extraction of ground water.
xix)	Drilling and blasting (if any) shall be conducted by using dust extractors/ wet drilling.	Complying. Wet drilling is being followed.
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 matter escape during the course of transportation. No overloading of ores for transportation shall be undertaken.	Complying. Vehicles used for transportation of ores and other mining operations have valid permission as prescribed under Central Motor Vehicles rules,1989 and its amendments. It is ensured that no spillage occurs during transportation.
xxi)	Village roads through which transportation of ores are being carried out shall be regularly maintained by the company at its own expenses.	Complying. Village roads through which transportation is being carried out is regularly maintained by the company at its own expenses.
xxii)	A final mine closure plan, along with details of corpus funds, shall be submitted to the Ministry of Environments &Forests within six months, in advance of final mine closure for approval.	Noted.

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, SO2, NOX 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.	Compiled. Four Ambient Air Quality monitoring stations have been established in the core and buffer zone.
iv)	Data on Ambient Air Quality (RSPM, SPM, SO_2, and NOx) should be regularly submitted to the Ministry including its Regional Office located at Bangalore and the State Pollution Control Board/Central Pollution Control Boards once in six months.	Complying. Ambient air quality data is being submitted regularly to MoEF, Bangalore and SPCB/CPCB. AAQM data is attached as **Annexure-2.**
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.	Complying. Water is sprayed 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.	Complying earplugs/ muffs have been provided.
Vii)	Industrial waste water (Works shop and waste water from the mine should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December 1993 or as amended from time to time. Oil and Grease trap shall be instilled before discharge of effluents.	Not applicable, there is no workshop in the mines area and no waste water discharged from mines.
viii)	Personnel working in dusty areas shall be provided with protective respiratory devices and they shall also be imparted adequate training and information of Safety and Health aspects.	Complying. Personnel working in dusty areas have been provided with protective respiratory devices and adequate training and information of Safety and Health aspects provided.
ix)	A separate Environmental Management cell with suitable qualified personnel shall be set up the	Compiled. A separate Environmental Management cell with suitable qualified personnel has been set up

	control of Senior Executive, who will be report directly to the head of the organization.	under the control of a 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.	Compiled.
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.	Compiled.
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.	Compiled.
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.	Compiled.
xv)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and collector's office /Tahsildar's office for 30 days.	Noted.
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 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.	Compiled.

Annexure-2

AIR QUALITY MONITORING DATA

Report No.: I A2

1.	Name of the Project	:	M/s. JK Cement Works, Muddapur,
2.	Name of the Client	:	(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India
3.	Sample Collected By	:	Cosmo Conscious Research Laboratory
4.	Particulars of Sample Collected	:	Source Emission Air Quality Monitoring
5.	Sample Condition	:	Satisfactory
6.	Analysis Start Date	:	03.04.2024
7.	Analysis Completion Date	:	08.04.2024
8.	Month of Monitoring	:	April 2024
9.	Environmental condition at the time of sampling	:	33.6°C
10.	Unique Lab Report Number	:	TC6152230000007526F

Name of the Station/ Date of Sample Collection	Lab Sample Code	Particulars of Sample Collected			
		SO_2 (µg/m³)	NO_2 (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
AAQM Locations for Halki Mines		NAAQ standards 2009			
		80 (µg/m³)	80 (µg/m³)	100 (µg/m³)	60 (µg/m³)
AV- Near Halki mines office					
03.04.2024	957, 957, C43, 593	16	14	47	16
AVI- North Boundary Side					
03.04.2024	956, 956, C56, 592	12	17	53	17
AVII-Halki Village					
03.04.2024	959, 959, C120, 952	17	12	48	20
AVIII- Metgudda Village					
02.04.2024	952, 952, C40, 596	18	12	55	15

END OF REPORT

Note: 1. SO2 – Sulfur Dioxide, NO2 – Nitrogen Dioxide, , PM10 – Particulate Matter (size less than 10 µm), PM2.5 – Particulate Matter (size less than 2.5 µm).
2. The above results are related only to the samples collected & tested on the particular date and time.
3. RA – Reaffirmed.

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Combo Sampler	230568 to 230571	30.11.2023	29.11.2024

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY:
(M. Shashikala)
Head of the Laboratory

"SURVEY HOUSE", #121, 2nd Cross, Nehru Colony, Ballari–583103 (Karnataka)
Ph: 08392 255744, Website: www.tsccrl.com email: chiefexecutive@tsccrl.com

AIR QUALITY MONITORING DATA

Report No.: I A2

1.	Name of the Project	:	M/s. JK Cement Works, Muddapur,
2.	Name of the Client	:	(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India
3.	Sample Collected By	:	Cosmo Conscious Research Laboratory
4.	Particulars of Sample Collected	:	Source Emission Air Quality Monitoring
5.	Sample Condition	:	Satisfactory
6.	Analysis Start Date	:	07.05.2024
7.	Analysis Completion Date	:	08.05.2024
8.	Month of Monitoring	:	May 2024
9.	Environmental condition at the time of sampling	:	33.8°C
10.	Unique Lab Report Number	:	TC6152230000007639F

Name of the Station/ Date of Sample Collection	Lab Sample Code	Particulars of Sample Collected			
		SO_2 (µg/m³)	NO_2 (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
AAQM Locations for Halki Mines		NAAQ standards 2009			
		80 (µg/m³)	80 (µg/m³)	100 (µg/m³)	60 (µg/m³)
AV- Near Halki mines office					
07.05.2024	39, 39, C125, 814	17	13	54	16
AVI- North Boundary Side					
07.05.2024	38, 38, C132, 809	14	20	49	21
AVII-Halki Village					
07.05.2024	40, 40, C128, 816	17	12	48	18
AVIII- Metgudda Village					
06.05.2024	34, 34, C123, 815	18	13	52	24

END OF REPORT

Note: 1. SO2 – Sulfur Dioxide, NO2 – Nitrogen Dioxide, , PM10 – Particulate Matter (size less than 10 µm), PM2.5 – Particulate Matter (size less than 2.5 µm).
2. The above results are related only to the samples collected & tested on the particular date and time.
3. RA – Reaffirmed.

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Combo Sampler	230568 to 230571	30.11.2023	29.11.2024

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY:
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AIR QUALITY MONITORING DATA

Report No.: I A2

1.	Name of the Project	:	**M/s. JK Cement Works, Muddapur,**
2.	Name of the Client	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4.	Particulars of Sample Collected	:	**Source Emission Air Quality Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Analysis Start Date	:	**17.06.2024**
7.	Analysis Completion Date	:	**20.06.2024**
8.	Month of Monitoring	:	**June 2024**
9.	Environmental condition at the time of sampling	:	**29.9°C**
10.	Unique Lab Report Number	:	**TC6152230000007739F**

Name of the Station/ Date of Sample Collection	Lab Sample Code	Particulars of Sample Collected			
		SO_2 (µg/m³)	NO_2 (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
AAQM Locations for Halki Mines		**NAAQ standards 2009**			
		80 (µg/m³)	**80 (µg/m³)**	**100 (µg/m³)**	**60 (µg/m³)**
AV- Near Halki mines office					
19.06.2024	156, 156, C142, 290	15	20	58	10
AVI- North Boundary Side					
19.06.2024	157, 157, C141, 289	16	18	51	19
AVII-Halki Village					
18.06.2024	154, 154, C147, 295	16	13	53	18
AVIII- Metgudda Village					
18.06.2024	153, 153, C146, 294	12	14	59	16

END OF REPORT

Note: 1. SO2 – Sulfur Dioxide, NO2 – Nitrogen Dioxide, , PM10 – Particulate Matter (size less than 10 µm), PM2.5 – Particulate Matter (size less than 2.5 µm).
2. The above results are related only to the samples collected & tested on the particular date and time.
3. RA – Reaffirmed.

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Combo Sampler	230568 to 230571	30.11.2023	29.11.2024

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY:
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Ph: 08392 255744, Website: www.tsccrl.com email: chiefexecutive@tsccrl.com

AIR QUALITY MONITORING DATA

1.	Name of the Project	:	**M/s. JK Cement Works, Muddapur,**
2.	Name of the Client	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4.	Particulars of Sample Collected	:	**Source Emission Air Quality Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Analysis Start Date	:	**23.08.2024**
7.	Analysis Completion Date	:	**23.08.2024**
8.	Report Issue Date	:	**02.09.2024**
8.	Month of Monitoring	:	**August 2024**
9.	Environmental condition at the time of sampling	:	**28.3°C**
10.	Unique Lab Report Number	:	**TC6152240000000053F**

Name of the Station/ Date of Sample Collection	Lab Sample Code	Particulars of Sample Collected			
		SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)
AAQM Locations for Halki Mines		**NAAQ standards 2009**			
		80 ($\mu g/m^3$)	**80 ($\mu g/m^3$)**	**100 ($\mu g/m^3$)**	**60 ($\mu g/m^3$)**
AV- Near Halki mines office					
20.08.2024	365, 365, C10, 460	12	21	57	17
AVI- North Boundary Side					
20.08.2024	366, 366, C09, 454	13	17	56	11
AVII-Halki Village					
20.08.2024	363, 363, C07, 463	15	14	51	12
AVIII- Metgudda Village					
21.08.2024	362, 362, C04, 458	21	10	59	22

END OF REPORT

Note: 1. SO2 – Sulfur Dioxide, NO2 – Nitrogen Dioxide, , PM10 – Particulate Matter (size less than 10 µm), PM2.5 – Particulate Matter (size less than 2.5 µm).
2. The above results are related only to the samples collected & tested on the particular date and time.
3. RA – Reaffirmed.

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Combo Sampler	230568 to 230571	30.11.2023	29.11.2024

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY: SHASHIKALA MULABAGULA Digitally signed by SHASHIKALA MULABAGULA Date: 2024.09.05 16:37:23 +05'30'
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AIR QUALITY MONITORING DATA

Report No.: I A2

1.	Name of the Project	:	**M/s. JK Cement Works, Muddapur,**
2.	Name of the Client	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4.	Particulars of Sample Collected	:	**Source Emission Air Quality Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Analysis Start Date	:	**17.06.2024**
7.	Analysis Completion Date	:	**20.06.2024**
8.	Month of Monitoring	:	**June 2024**
9.	Environmental condition at the time of sampling	:	**29.9°C**
10.	Unique Lab Report Number	:	**TC6152230000007739F**

Name of the Station/ Date of Sample Collection	Lab Sample Code	Particulars of Sample Collected			
		SO_2 (µg/m³)	NO_2 (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
AAQM Locations for Halki Mines		**NAAQ standards 2009**			
		80 (µg/m³)	80 (µg/m³)	100 (µg/m³)	60 (µg/m³)
AV- Near Halki mines office					
19.06.2024	156, 156, C142, 290	15	20	58	10
AVI- North Boundary Side					
19.06.2024	157, 157, C141, 289	16	18	51	19
AVII-Halki Village					
18.06.2024	154, 154, C147, 295	16	13	53	18
AVIII- Metgudda Village					
18.06.2024	153, 153, C146, 294	12	14	59	16

END OF REPORT

Note: 1. SO2 – Sulfur Dioxide, NO2 – Nitrogen Dioxide, , PM10 – Particulate Matter (size less than 10 µm), PM2.5 – Particulate Matter (size less than 2.5 µm).
2. The above results are related only to the samples collected & tested on the particular date and time.
3. RA – Reaffirmed.

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Combo Sampler	230568 to 230571	30.11.2023	29.11.2024

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY:
(M. Shashikala)
Head of the Laboratory

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Ph: 08392 255744, Website: www.tsccrl.com email: chiefexecutive@tsccrl.com

AIR QUALITY MONITORING DATA

1.	Name of the Project	:	**M/s. JK Cement Works, Muddapur,**
2.	Name of the Client	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4.	Particulars of Sample Collected	:	**Source Emission Air Quality Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Analysis Start Date	:	**23.08.2024**
7.	Analysis Completion Date	:	**23.08.2024**
8.	Report Issue Date	:	**02.09.2024**
8.	Month of Monitoring	:	**August 2024**
9.	Environmental condition at the time of sampling	:	**28.3°C**
10.	Unique Lab Report Number	:	**TC6152240000000053F**

Name of the Station/ Date of Sample Collection	Lab Sample Code	Particulars of Sample Collected			
		SO_2 (µg/m³)	NO_2 (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)
AAQM Locations for Halki Mines		**NAAQ standards 2009**			
		80 (µg/m³)	**80** (µg/m³)	**100** (µg/m³)	**60** (µg/m³)
AV- Near Halki mines office					
20.08.2024	365, 365, C10, 460	12	21	57	17
AVI- North Boundary Side					
20.08.2024	366, 366, C09, 454	13	17	56	11
AVII-Halki Village					
20.08.2024	363, 363, C07, 463	15	14	51	12
AVIII- Metgudda Village					
21.08.2024	362, 362, C04, 458	21	10	59	22

END OF REPORT

Note: 1. SO2 – Sulfur Dioxide, NO2 – Nitrogen Dioxide, , PM10 – Particulate Matter (size less than 10 µm), PM2.5 – Particulate Matter (size less than 2.5 µm).

2. The above results are related only to the samples collected & tested on the particular date and time.

3. RA – Reaffirmed.

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Combo Sampler	230568 to 230571	30.11.2023	29.11.2024

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY: SHASHIKALA MULABAGULA Digitally signed by SHASHIKALA MULABAGULA Date: 2024.09.05 16:37:23 +05'30'

(M. Shashikala)
Head of the Laboratory

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Annexure-3

FUGITIVE EMISSION AIR QUALITY MONITORING DATA

Report No. I B2

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4.	Particulars of Sample Collected	:	**Fugitive Emission Air Quality Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Analysis Start Date	:	**07.05.2024**
7.	Analysis Completion Date	:	**09.05.2024**
8.	Month of Monitoring	:	**May 2024**
9.	Environmental condition at the time of sampling	:	**33.8°C**
10.	Method adopted (Sampling & Analysis)	:	**IS 5182 (Part 4) :2006**

Sl. No.	Date of Sample Collection	Name of the Station	Lab Sample Code	SPM (mg/m^3)	IBM Standard (mg/m^3)
Fugitive Locations for Halki Mines					
1.	06.05.2024	Drilling Area	510435	**1.05**	1.2
2.	06.05.2024	Loading Area	510436	**0.99**	1.2
3.	07.05.2024	Haulage Road	510440	**1.02**	1.2
4.	07.05.2024	Waste Dumping Site	510434	**1.06**	1.2
5.	06.05.2024	Service Road	510423	**0.99**	1.2

END OF REPORT

Note: 1. SPM – Suspended Particulate Matter.
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY:
(M. Shashikala)
Head of the Laboratory

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FUGITIVE EMISSION AIR QUALITY MONITORING DATA

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4	Particulars of Sample Collected	:	**Fugitive Emission Air Quality Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Analysis Start Date	:	**28.09.2024**
7.	Analysis Completion Date	:	**28.09.2024**
8.	Report Issue Date	:	**04.10.2024**
9.	Month of Monitoring	:	**September 2024**
10.	Environmental condition at the time of sampling	:	**29.6°C**
11.	Method adopted (Sampling & Analysis)	:	**IS 5182 (Part 4) :2006**

Sl. No.	Date of Sample Collection	Name of the Station	Lab Sample Code	SPM (mg/m^3)	IBM Standard (mg/m^3)
Fugitive Locations for Halki Mines					
1.	20.09.2024	Drilling Area	509954	**1.01**	1.2
2.	21.09.2024	Loading Area	509953	**0.97**	1.2
3.	22.09.2024	Haulage Road	509959	**0.83**	1.2
4.	21.09.2024	Waste Dumping Site	509958	**1.09**	1.2
5.	22.09.2024	Service Road	509964	**1.14**	1.2

END OF REPORT

Note: 1. SPM – Suspended Particulate Matter.
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY:
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Annexure-4

NOISE LEVEL MONITORING DATA

Report No. IV C

1.	Name of the Client	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample Collected By	:	**Cosmo Conscious Research Laboratory**
4.	Particulars of Sample Collected	:	**Noise Monitoring**
5.	Sample Condition	:	**Satisfactory**
6.	Monitoring Date	:	**13.05.2024 to 14.05.2024**
7.	Month of Monitoring	:	**May 2024**

I. Halki Mines (Buffer Zone) :

Sl. No.	Code	Sampling Location	Date	Unit	L max.	L eq.		L min.
						Day	Night	
1.	N1	Halki Mines North Boundary	13.05.2024	dB (A)	62.2	53.9	53.1	52.0
2.	N2	Halki Mines Office	14.05.2024	dB (A)	61.8	54.2	53.5	52.8

II. Halki Mines (Core Zone) :

Sl. No.	Code	Sampling Location	Date	Unit	Day	
					Max.	Min.
1.	N1	Halki Mines Drilling Time	14.05.2024	dB	63.9	62.4
2.	N2	Halki Mines Waste Dump Site	14.05.2024	dB	64.2	61.7
3.	N3	Halki Mines Service Road	14.05.2024	dB	63.8	62.2
4.	N4	Excavator Halki Mine	14.05.2024	dB	62.4	61.1

MOEF ambient Noise standards in dB(A) Leq (No.41, Dt.11.01.2010)	Residential Area limits dB(A) Leq		Industrial Area limits dB(A) Leq	
	Day time	Night time	Day time	Night time
	55	45	75	70
Method Adopted	Integrated Sound Level Meter			

Name of the Equipment	Eq. ID. No.	Date of Calibration	Calibration Due on
Sound Level Meter	Lutron/SL-4030	26.06.2023	25.06.2024

Note: 1.The above results are related only to the samples collected & tested on the particular date and time

MONITORED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY: **(M. Shashikala)**
Head of the Laboratory

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NOISE LEVEL MONITORING DATA

1.	Name of the Client	:	M/s. JK Cement Works, Muddapur,
2.	Address	:	(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India
3.	Sample Collected By	:	Cosmo Conscious Research Laboratory
4.	Particulars of Sample Collected	:	Noise Monitoring
5.	Sample Condition	:	Satisfactory
6.	Monitoring Date	:	19.09.2024
7.	Month of Monitoring	:	September 2024

I. Halki Mines (Buffer Zone) :

Sl. No.	Code	Sampling Location	Date	Unit	L max.	L eq.		L min.
						Day	Night	
1.	N1	Halki Mines North Boundary	19.09.2024	dB (A)	61.4	52.8	51.6	50.9
2.	N2	Halki Mines Office	19.09.2024	dB (A)	54.8	53.2	52.9	51.9

II. Halki Mines (Core Zone) :

Sl. No.	Code	Sampling Location	Date	Unit	Day	
					Max.	Min.
1.	N1	Halki Mines Drilling Time	19.09.2024	dB	64.2	61.2
2.	N2	Halki Mines Waste Dump Site	19.09.2024	dB	63.8	60.9
3.	N3	Halki Mines Service Road	19.09.2024	dB	62.2	60.4
4.	N4	Excavator Halki Mine	19.09.2024	dB	61.8	60.7

MOEF ambient Noise standards in dB(A) Leq (No.41, Dt.11.01.2010)	Residential Area limits dB(A) Leq		Industrial Area limits dB(A) Leq	
	Day time	Night time	Day time	Night time
	55	45	75	70
Method Adopted	Integrated Sound Level Meter			

Note: 1.The above results are related only to the samples collected & tested on the particular date and time

MONITORED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

SHASHIKALA MULABAGULA Digitally signed by SHASHIKALA MULABAGULA Date: 2024.10.04 18:28:10 +05'30'

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Annexure-5

Analysis Report of Bore well Water

Report No: II J1

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample collected by	:	**Cosmo Conscious Research Laboratory**
4.	Name of the Location	:	**Halki Mines**
5.	Particulars of sample collected	:	**Bore well Water**
6.	Field Sample code	:	**JKGW12**
7.	Lab Sample Code	:	**CCRL W 9648**
8.	Date of sample collection	:	**09.05.2024**
9.	Date of sample Received	:	**11.05.2024**
10.	Date of sample Analyzed	:	**11.05.2024 to 18.05.2024**
11.	Method of Sampling	:	**IS:3025 (Part 1) 1987 (Reaffirmed 2019)**
12.	Environmental condition at the time of sampling	:	**33.5°C**
13.	Unique Lab Report Number	:	**TC6152230000007650F**

Sl. No	Parameters	Protocol	Unit of Measurement	Results	Drinking water specification Standards as per IS:10500:2012
				May.'-24	Limits
PHYSICAL					
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2021, Platinum cobalt Method	Hazen units	**<1**	15
2.	Temperature	IS:3025 (PART 9)-1984, RA-2017, Thermometer	ºC	**30.20**	-
3.	Conductivity	IS:3025 (PART 14)-1984, RA-2019, Electrometric method	µs/cms	**875**	-
4.	Total Dissolved Solids	IS:3025 (part 16)-1984, RA-2017, Gravimetric method	mg/L	**613**	2000
5.	pH	IS:3025 (part 11)-1983, RA-2022, Electrometric method	-	**7.71**	6.5 to 8.5
6.	Turbidity	IS:3025 (part 10)-1984, RA-2017, Nephelometric method	NTU	**0.00**	5
7.	Total Suspended Solids	IS:3025 (part 17)-1984, RA-2021, Gravimetric Method	mg/L	**8**	-
CHEMICAL					
8.	Dissolved Oxygen	IS:3025 (part 38)-1989, RA-2019, Winkler titrimetric azide modification	mg/L	**6.10**	-
9.	Biochemical Oxygen Demand for 3 days at 27°C	IS:3025 (part 44)-1993, , RA-2019 Three days BOD at 27°C	mg/L	**<1**	-
10.	Chemical Oxygen Demand as O_2	APHA 23rd Edition 5220-B (P.NO. 5-17) Closed reflux method	mg/L	**<1**	-
11.	Dissolved Phosphate as PO_4	IS:3025 (part 31)-1988, RA-2021 Stannous chloride method	mg/L	**0.188**	-
12.	Sodium as Na	IS:3025 (part 45)-1993, RA-2019 Flame Emissionphotometric method	mg/L	**20.40**	-
13.	Potassium as K	IS:3025 (part 17)-1984, , RA-2019 Flame Emissionphotometric method	mg/L	**0.20**	-
14.	Calcium as Ca	IS:3025 (part 40)-1991, RA-2019 EDTA Titrimetric method	mg/L	**70.54**	200

Cont'd...

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Sl. No	Parameters	Protocol	Unit of Measure ment	Results	Drinking water specification Standards as per IS:10500:2012
				May.'-24	Limits
15.	Magnesium as Mg	APHA 23rd Edition 3500-B-Mg By calculation	mg/L	53.39	100
16.	Total Hardness as $CaCO_3$	IS:3025 (part 21)-1983, RA-2019 EDTA Titrimetric method	mg/L	396	600
17.	Chloride as Cl	IS:3025 (part 32)-1988, RA-2019 Argentometric Method	mg/L	36.98	1000
18.	Sulphate as SO_4	APHA 23rd Edition 4500-SO_4^{2-}E (P.NO.4-190-191) Turbidimetric method	mg/L	23.40	400
19.	Fluoride as F	APHA 23rd Edition 4500-F D. (P.NO. 4-87 - 88)SPADNS Method	mg/L	0.59	1.50
20.	Nitrate Nitrogen as NO_3	IS:3025 (part 34)-1988, RA-2019 Chromotropic acid method	mg/L	1.48	45
21.	Total Alkalinity as $CaCO_3$	IS:3025 (part 23)-1986, RA-2019 Indicator method	mg/L	335	600
22.	Acidity as $CaCO_3$	IS:3025 (part 22)-1986, RA-2019 Indicator method	mg/L	0.50	-
23.	Oil & Grease	IS:3025 (part 39)-1991, RA-2021 Partition Gravimetric method	mg/L	BDL	-
TRACE METALS					
24.	Total Iron as Fe	APHA 23rd Edition 3111B (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.30
25.	Nickel as Ni	APHA 23rd Edition 3111B (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.02
26.	Manganese as Mn	APHA 23rd Edition 3111B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.30
27.	Copper as Cu	APHA 23rd Edition 3111B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	1.50
28.	Zinc as Zn	APHA 23rd Edition 3111 B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	15
29.	Lead as Pb	APHA 23rd Edition 3111 B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.01
30.	Chromium as Cr	APHA 23rd Edition 3111 B. (p.no.3-18) Direct Air Acetylene Flame Method	mg/L	BDL	0.05
31.	Silver as Ag	APHA 23rd Edition 3111 B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.10

End of Report

Note: 1. RA: Reaffirmed **BDL-** Below detectable limit, (For trace metals <0.1, Oil & grease <4.0).
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY: **(G.Dhavaleshwar)**
Analyst

VERIFIED BY: **(P.Harika)**
Technical Manager

AUTHORISED SIGNATORY: **(M. Shashikala)**
Head of the Laboratory

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Analysis Report of Bore well Water

Report No: II J2

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur, (Unit: J.K.Cement Ltd),P.O.Muddapur-**
2.	Address	:	**587122, Dist.Bagalkot (Karnataka) India**
3.	Sample collected by	:	**Cosmo Conscious Research Laboratory**
4.	Name of the Location	:	**Halki Mines**
5.	Particulars of sample collected	:	**Bore well Water**
6.	Field Sample code	:	**JKGW12**
7.	Lab Sample Code	:	**CCRL W 9648**
8.	Date of sample collection	:	**09.05.2024**
9.	Date of sample Received	:	**11.05.2024**
10.	Date of sample Analyzed	:	**11.05.2024 to 18.05.2024**
1.	Method of Sampling	:	**IS:3025 (Part 1) 1987 (Reaffirmed 2019)**

Sl. No	Parameters	Protocol	Unit of Measurement	Results	Drinking water specification Standards as per IS:10500:2012
				May.'-24	Limits
TRACE METALS					
1.	Mercury as Hg	APHA 23rd Edition 3112 B. (p.no.3-23) Direct Air Acetylene e Flame Method	mg/L	**BDL**	0.001
MICROBIOLOGICAL					
2.	Total Coliform count	APHA 23rd Edition 9222-B (p.no.9-57-61) Membrane filter technique	CFU/ 100 ml	**Absent**	Shall not be detectable in any 100 ml sample
3.	Escherichia coli count	APHA 23rd Edition 9221-F (p.no.9-51-52) Membrane filter technique	CFU/ 100 ml	**Absent**	Shall not be detectable in any 100 ml sample

End of Report

Note: **1. BDL-** Below detectable limit. (Mercury <0.001).
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

VERIFIED BY:
(P.Harika)
Technical Manager

AUTHORISED SIGNATORY: **(M. Shashikala)**
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WATER QUALITY MONITORING DATA

(GROUND WATER)

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample collected by	:	**Cosmo Conscious Research Laboratory**
4.	Name of the Location	:	**Halki Mines**
5.	Particulars of sample collected	:	**Bore well**
6.	Field Sample code	:	**JKGW11**
7.	Lab Sample Code	:	**CCRL W 9752**
3.	Date of sample collection	:	**25.08.2024**
9.	Date of sample Received	:	**25.08.2024**
10.	Date of sample Analyzed	:	**25.08.2024 to 30.08.2024**
11.	Report Issue Date	:	**02.09.2024**
12.	Method of Sampling	:	**IS:3025 (Part 1) 1987 (Reaffirmed 2019)**
13.	Environmental condition at the time of sampling	:	**29.5°C**
14.	Unique Lab Report Number	:	**TC6152240000000057F**

Sl. No	Parameters	Protocol	Unit of Measure ment	Results	Drinking water specification Standards as per IS:10500:2012
				Aug.'-24	Limits
PHYSICAL					
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2021, Platinum cobalt Method	Hazen units	<1	15
2.	Temperature	IS:3025 (PART 9)-1984, RA-2017, Thermometer	°C	27.90	-
3.	Conductivity	IS:3025 (PART 14)-1984, RA-2019, Electrometric method	µs/cms	508	-
4.	Total Dissolved Solids	IS:3025 (part 16)-1984, RA-2017, Gravimetric method	mg/L	359	2000
5.	pH	IS:3025 (part 11)-1983, RA-2022, Electrometric method	-	7.29	6.5 to 8.5
6	Turbidity	IS:3025 (part 10)-1984, RA-2017, Nephelometric method	NTU	0.00	5
7.	Total Suspended Solids	IS:3025 (part 17)-1984, RA-2021, Gravimetric Method	mg/L	2	-
CHEMICAL					
8.	Dissolved Oxygen	IS:3025 (part 38)-1989, RA-2019, Winkler titrimetric azide modification	mg/L	6.00	-
9.	Biochemical Oxygen Demand for 3 days at 27°C	IS:3025 (part 44)-1993, , RA-2019 Three days BOD at 27°C	mg/L	<1	-
10.	Chemical Oxygen Demand as O_2	APHA 23rd Edition 5220-B (P.NO. 5-17) Closed reflux method	mg/L	<1	-
11.	Dissolved Phosphate as PO_4	IS:3025 (part 31)-1988, RA-2021 Stannous chloride method	mg/L	0.480	-
12.	Sodium as Na	IS:3025 (part 45)-1993, RA-2019 Flame Emissionphotometric method	mg/L	46.10	-
13.	Potassium as K	IS:3025 (part 17)-1984, , RA-2019 Flame Emissionphotometric method	mg/L	2.50	-
14.	Calcium as Ca	IS:3025 (part 40)-1991, RA-2019 EDTA Titrimetric method	mg/L	66.53	200

Cont'd...

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Sl. No	Parameters	Protocol	Unit of Measurement	Results	Drinking water specification Standards as per IS:10500:2012
				Aug.'-24	Limits
15.	Magnesium as Mg	APHA 23rd Edition 3500-B-Mg By calculation	mg/L	19.40	100
16.	Total Hardness as $CaCO_3$	IS:3025 (part 21)-1983, RA-2019 EDTA Titrimetric method	mg/L	246	600
17.	Chloride as Cl	IS:3025 (part 32)-1988, RA-2019 Argentometric Method	mg/L	20.49	1000
18.	Sulphate as SO_4	APHA 23rd Edition 4500-SO_4^{2-}E (P.NO.4-190-191) Turbidimetric method	mg/L	4.79	400
19.	Fluoride as F	APHA 23rd Edition 4500-F^- D. (P.NO. 4-87 – 88)SPADNS Method	mg/L	0.56	1.50
20.	Nitrate Nitrogen as NO_3	IS:3025 (part 34)-1988, RA-2019 Chromotropic acid method	mg/L	1.48	45
21.	Total Alkalinity as $CaCO_3$	IS:3025 (part 23)-1986, RA-2019 Indicator method	mg/L	275	600
22.	Acidity as $CaCO_3$	IS:3025 (part 22)-1986, RA-2019 Indicator method	mg/L	Nil	-
23.	Oil & Grease	IS:3025 (part 39)-1991, RA-2021 Partition Gravimetric method	mg/L	BDL	-
TRACE METALS					
24.	Total Iron as Fe	APHA 23rd Edition 3111B (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.30
25.	Nickel as Ni	APHA 23rd Edition 3111B (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.02
26.	Manganese as Mn	APHA 23rd Edition 3111B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.30
27.	Copper as Cu	APHA 23rd Edition 3111B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	1.50
28.	Zinc as Zn	APHA 23rd Edition 3111 B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	15
29.	Lead as Pb	APHA 23rd Edition 3111 B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.01
30.	Chromium as Cr	APHA 23rd Edition 3111 B. (p.no.3-18) Direct Air Acetylene Flame Method	mg/L	BDL	0.05
31.	Silver as Ag	APHA 23rd Edition 3111 B. (p.no.3-19) Direct Air Acetylene Flame Method	mg/L	BDL	0.10

End of Report

Note: 1. RA: Reaffirmed **BDL**- Below detectable limit, (For trace metals <0.1, Oil & grease <4.0).
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY: **(G.Dhavaleshwar)**
Analyst

VERIFIED BY: **(P.Harika)**
Technical Manager

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Head of the Laboratory

"SURVEY HOUSE", #121, 2nd Cross, Nehru Colony, Ballari–583103 (Karnataka)
Ph: 08392 255744, Website: www.tsccrl.com email: chiefexecutive@tsccrl.com

WATER QUALITY MONITORING DATA

(GROUND WATER)

F	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample collected by	:	**Cosmo Conscious Research Laboratory**
4.	Name of the Location	:	**Halki Mines**
5.	Particulars of sample collected	:	**Bore well**
6.	Field Sample code	:	**JKGW11**
7.	Lab Sample Code	:	**CCRL W 9752**
8.	Date of sample collection	:	**25.08.2024**
9.	Date of sample Received	:	**25.08.2024**
10.	Date of sample Analyzed	:	**25.08.2024 to 30.08.2024**
11.	Report Issue Date	:	**02.09.2024**
12.	Method of Sampling		**IS:3025 (Part 1) 1987 (Reaffirmed 2019)**

Sl. No	Parameters	Protocol	Unit of Measurement	Results	Drinking water specification Standards as per IS:10500:2012
				Aug.'-24	Limits
TRACE METALS					
1.	Mercury as Hg	APHA 23rd Edition 3112 B. (p.no.3-23) Direct Air Acetylene e Flame Method	mg/L	BDL	0.001
MICROBIOLOGICAL					
2.	Total Coliform count	APHA 23rd Edition 9222-B (p.no.9-57-61) Membrane filter technique	CFU/ 100 ml	Absent	Shall not be detectable in any 100 ml sample
3.	Escherichia coli count	APHA 23rd Edition 9221-F (p.no.9-51-52) Membrane filter technique	CFU/ 100 ml	Absent	Shall not be detectable in any 100 ml sample

End of Report

Note: 1. **BDL-** Below detectable limit. (Mercury <0.001).
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY: **(G.Dhavaleshwar)**
Analyst

VERIFIED BY: **(P.Harika)**
Technical Manager

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Analysis Report of Mines Pit Water

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample collected by	:	**Cosmo Conscious Research Laboratory**
4.	Name of the Location	:	**Halki Mines**
5.	Particulars of sample collected	:	**Mines Pit Water-1**
6.	Field Sample code	:	**JKSW7**
7.	Lab Sample Code	:	**CCRL W 9788**
8.	Date of sample collection	:	**23.09.2024**
9.	Date of sample Received	:	**24.09.2024**
10.	Date of sample Analyzed	:	**24.09.2024 to 01.10.2024**
11.	Report Issue Date	:	**04.10.2024**
12.	Method of Sampling	:	**IS:17614 (Part-I) 2021**
13.	Environmental condition at the time of sampling	:	**29.8°C**

Sl. No	Parameters	Protocol	Unit of Measurement	Results	General Standards for Inland Surface water Schedule-VI (EPA-'86)
				Sept.'-24	Limits
PHYSICAL					
1.	Colour	IS: 3025 (PART 4)- 1984, RA-2021, Platinum cobalt Method	Hazen units	<1	-
2.	Conductivity	IS:3025 (PART 14)-1984, RA-2019, Electrometric method	µs/cms	666	-
3.	Total Dissolved Solids	IS:3025 (part 16)-1984, RA-2023, Gravimetric method	mg/L	505	-
4.	pH	IS:3025 (part 11)-1983, RA-2012, Electrometric method	-	8.61	5.50 to 9.0
5.	Turbidity	IS:3025 (part 10)-1984, RA-2023, Nephelometric method	NTU	0.90	-
CHEMICAL					
6.	Dissolved Phosphate as PO_4	IS:3025 (part 31)-1988, RA-2021 Stannous chloride method	mg/L	0.120	5
7.	Sodium as Na	IS:3025 (part 45)-1993, RA-2019 Flame Emissionphotometric method	mg/L	116.20	-
8.	Potassium as K	IS:3025 (part 17)-1984, , RA-2019 Flame Emissionphotometric method	mg/L	11.9	-
9.	Calcium as Ca	IS:3025 (part 40)-1991, RA-2019 EDTA Titrimetric method	mg/L	61.72	-
10.	Magnesium as Mg	APHA 24th Edition 350-B-Mg By calculation	mg/L	36.88	-
11.	Total Hardness as $CaCO_3$	IS:3025 (part 21)-1983, RA-2019 EDTA Titrimetric method	mg/L	306	-
12.	Chloride as Cl	IS:3025 (part 32)-1988, RA-2019 Argentometric Method	mg/L	21.99	-
13.	Sulphate as SO_4	APHA 24th Edition 4500-SO_4^{2-}-E Turbidimetric method	mg/L	17.76	-

Cont'd...

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Sl. No	Parameters	Protocol	Unit of Measure ment	Results	General Standards for Inland Surface water Schedule-VI (EPA-'86)
				Sept.'-24	Limits
14.	Fluoride as F	APHA 24th Edition 4500-F- D. SPADNS Method	mg/L	1.10	2
15.	Nitrate Nitrogen as NO_3	IS:3025 (part 34)-1988, RA-2019 Chromotropic acid method	mg/L	2.89	10
16.	Total Alkalinity as $CaCO_3$	IS:3025 (part 23)-1986, RA-2023 Indicator method	mg/L	60	-
TRACE METALS					
17.	Total Iron as Fe	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	3
18.	Nickel as Ni	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	3
19.	Manganese as Mn	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	2
20.	Copper as Cu	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	3
21.	Zinc as Zn	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	3
22.	Lead as Pb	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	0.10
23.	Chromium as Cr	APHA 24th Edition 3111B Direct Air Acetylene Flame Method	mg/L	BDL	2

End of Report

Note: 1. RA: Reaffirmed **BDL**- Below detectable limit, (For trace metals <0.1, Oil & grease <4.0).
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY: **(G.Dhavaleshwar)**
Analyst

VERIFIED BY: **(P.Harika)**
Technical Manager

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Analysis Report of Mines Pit Water

1.	Name of the Industry	:	**M/s. JK Cement Works, Muddapur,**
2.	Address	:	**(Unit: J.K.Cement Ltd),P.O.Muddapur-587122, Dist.Bagalkot (Karnataka) India**
3.	Sample collected by	:	**Cosmo Conscious Research Laboratory**
4.	Name of the Location	:	**Halki Mines**
5.	Particulars of sample collected	:	**Mines Pit Water-1**
6.	Field Sample code	:	**JKSW7**
7.	Lab Sample Code	:	**CCRL W 9788**
8.	Date of sample collection	:	**23.09.2024**
9.	Date of sample Received	:	**24.09.2024**
10.	Date of sample Analyzed	:	**24.09.2024 to 01.10.2024**
11.	Report Issue Date	:	**04.10.2024**
12.	Method of Sampling	:	**IS:17614 (Part-I) 2021**

Sl. No	Parameters	Protocol	Unit of Measurement	Results	General Standards for Inland Surface water Schedule-VI (EPA-'86)
				Sept.'-24	Limits
TRACE METALS					
1.	Mercury as Hg	APHA 24th Edition 3112 B. Direct Air Acetylene e Flame Method	mg/L	**BDL**	0.01

End of Report

Note: **1. BDL-** Below detectable limit. (Mercury <0.001).
2. The above results are related only to the samples collected & tested on the particular date and time.

ANALYZED BY:
(G.Dhavaleshwar)
Analyst

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Technical Manager

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Annexure-6

M/s. J K Cement Works Muddapur

Environmental Expenditure for Halki Limestone Mine-2344(A)
Apr 2024 to Sep 2024

Sl. No.	Particulars	Cost (In Rs.)	Remarks
1	Pollution Control	3017550.00	Water tankers
2	Pollution Monitoring	83050.00	
3	Occupational Health & Safety	0.00	
4	Green belt	250000.00	Plantation & Gardener Salary
5	Reclamation	0.0	
6	Others	103500.00	JCB
	Total	**34,54100.00**	**Rupees Thirty Four Lacs Fifty Four Thousand & One Hundred Only**

Annexure-7

JK CEMENT WORKS, MUDDAPUR

DETAILS OF CSR ACTIVITY UNDERTAKEN DURING APRIL-2024 TO SEPTEMBER-2024		
SL NO	Particulars	Amount (RS)
1	Support for Health care, training and medical Aid	3,32,566
2	Education Aid and support to schools	8,87,500
3	Environmental activities and sampling donation	29,500
4	Rural development & other welfare activities	2,38,260
5	Other Activities	2,50,000
Total		**17,37,826**