



THE SINGARENI COLLIERIES COMPANY LIMITED
(A Govt. Company)
Bhupalpalli Area

Ref. No: BHP/ENV/46/2022/ 121

Date: 11.11.2022
30

The Director,
Ministry of Environment, Forests & Climate Change (MoEF & CC),
Integrated Regional Office,
3rd Floor, Room No. 309
Aranya Bhavan, Opp:RBI
Saifabad-500004,
Hyderabad.

Sir,

Sub: Submission of Half yearly Environmental monitoring Reports of KTK OC III Project of Bhupalpalli Area for the period of April-2022 to Sep-2022 – Reg.

Ref. No: MoEF:J-11015/464/2012-IA-II(M) Dated:27.04.2020

With reference to the subject cited above, please find enclosed herewith the half yearly environmental monitoring report along with soft copy for the period ending 30-09-2022 in respect of Kakatiya khani Open Cast -III Project of Singareni Collieries Company Ltd, Bhupalpalli Area.

The report consists of Part-I, which indicates the status of the Implementation of Environmental Clearance conditions, and Part-II & II A indicates various environmental control measures and analysis of data.

Thanking you,

Yours faithfully,


General Manager
General Manager
SCCL, Bhupalpalli Area.

Encl: as above

Cc:

Environmental Engineer,
TSPCB, R.O. Warangal



THE SINGARENI COLLIERIES COMPANY LIMITED
(A Government Company)
BHUPALAPALLI AREA

HALF YEARLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS
DURING THE PERIOD APRIL, 2022 to SEPTEMBER, 2022

PART – I

1. SALIENT FEATURES OF THE PROJECT:

1.	Name of the Project	KTK OC III Project
2.	Organization	The S.C.C.Ltd.
3.	Coal field	GODAVARI VALLEY COAL FIELD
4.	Type of Mine	Opencast and Underground mine.
5.	Technology	Open cast: Shovel –Dumper combination UG: Development with SDL'S
6.	Environmental Clearance	
	Letter No & date	: MoEF:J-11015/464/2012-IA-II(M) Dated:27.04.2020
	Sanctioned Capacity	: 3.00 MTPA (Normative) {3.75 MTPA-Open Cast mine (Peak). 0.48MTPA- Under Ground mine}
	Mining Lease Area.	: 1336.64 Ha
	Date of Public Hearing	: 14.07.2019
7.	Location of the Project	
	Village	: BASAWARAJUPALLI
	Tehsil / Mandal	: GHANPUR
	District	: JAYASHANKAR, BHUPALPALLY
	State	: TELANGANA STATE
	Latitude	: NORTH 18 ⁰ 19' 40" to 18 ⁰ 22'56"
	Longitude	: EAST 79 ⁰ 52' 42" to 79 ⁰ 55' 30"
	Topo Sheet	: 56N/15
	Nearest railway station	: Uppal, Near Kazipet.
	Nearest Airport	: Shamshabad, Hyderabad.
	Nearest town	: Hanamkonda, Warangal District
8.	Address for Correspondence	
	Name	: Sri Jingti Rajashekar
	Designation	: Dy. General Manager
	Address	: O/o : Agent, KTK-OC III Project Office
	PIN Code	: 506 345
	E-mail ID	: po_ktkoc3@scclmines.com
	Telephone No.	: 7382608945
	Fax No.	: -----
9.	Life of the Project	
	Life of the Project	: 31 Years
	Date of Opening	: 12.10.2020
	Total Life of the project as per EMP	: 32 Years
	Balance Life	: 28 Years
10.	Seams	
	No. of Seams Present	: 16
	Seams being worked	: 13

	Minimum Depth	: 40 mtrs
	Maximum Depth	: 300 mtrs
	Present working depth	: 64 mtrs
12.	Reserves	
	Total Geological Reserves	: 120.37 MT
	Total Extractable Reserves	: 75.55 MT
	Reserves already Extracted	: 2.670MT
	Balance Reserves	: 72.880MT
	Coal production during last 6 months	: 0.368 MT
13.	Over Burden (in Mm³)	
	Total OB	: 972.54 M.m ³ (including 3.82 M.m ³)
	OB extracted since inception	: 32.121M.m ³
	OB removed in last 6 months	: 7.872 M.m ³
	Stripping Ratio	: 23
14.	Top Soil	
	Total Topsoil	: 5.40 M.m ³
	Topsoil extracted since inception	: 1.805 M.m ³
	Topsoil removed in last six months	: 0.389 M.m ³
15.	Land Requirement (in Ha)	
	Total Requirement	: 1336.64
	Forest land involved	: NIL
	Non-forestland	: 1336.64
16.	Activity wise Land Requirement (in Ha)	
	Quarry Area	: 678.21
	External OB Dump	: 382.04
	Built up area/ Infrastructure	: 50.12
	Nallah diversion	25.89
	Undisturbed/NFL (exclusive UG area)	9.68
	Safe barrier, Roads, drainage around quarry and dump yard	: 190.70
	Total	: 1336.64
17.	Statutory Clearances	
	Mining Plan Approval	: Lr. No 38011/12/2017-PCA Dt.19.11.2018
	Ground Water Clearance	: Ground Water Clearance obtained vide Letter No.507/T/2018, Date 11.12.2019
	Consent for Establishment	: Order No: 01/TSPCB/CFE/JB/RO-WGL/HO/2020-321 Date 24.06.2020
	Consent for Operation	: Consent Order No: 200422480317 Dated 28.09.2020 valid up to 30.06.2025.
	Forest Clearance	: NA
	Mining Lease	: KTKOC -III Project falls in Mining Lease: 1. Peddapur ML- G.O. No. 114, dt. 19.04.1999 and valid up to dt.25.05.2029. 2. Peddapur Block I Ext (North) ML- G.O. No. 455, dt. 26.12.1998 and valid up to dt.25.05.2029. 3. Dip side of Peddapur Block I Ext (North) ML- G.O. No. 146, dt. 19.06.2009 and valid up to dt.16.09.2039.
	Others (Specify)	: ML of 422.69 Ha of Non-coal bearing area, G.O. No. 07, dt. 10.07.2020 belonging to above three mining leases.
18.	R & R Involved	: Madhavaopalli village cleared, remaining villages are under progress.

KTK OC-III PROJECT
COMPLIANCE REPORT OF EC CONDITIONS




Sl. No.	Condition	Present Status
4.(i)	The project proponent shall obtain Consent to Establish from the State Pollution Control Board for the proposed peak capacity of 3.75MTPA (Peak) through Opencast & 0.48MTPA Underground 4.375 MTPA prior to the commencement of the increased production.	<p>COMPLIED</p> <p>Consent to Establishment order obtained vide ltr.no.01/TSPCB/CFE/JP/RO-WGL/HO/2020-321, Dt: 24.06.2020 from State Pollution Control Board</p>
(ii)	Transportation of coal from the Coal Handling Plant shall be through covered trucks	<p>COMPLIED</p> <p>Transportation of coal from mobile crusher are being covered with tarpaulin.</p>  <p>Image: Tarpaulin covered on Lorries at KTK OC-3 Project UG section</p>  <p>Image: Lorry covered with tarpaulin at OC section.</p>
(iii)	To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.	<p>COMPLIED</p> <p>To control the dust, one cloud tech mist sprayer is arranged at the discharge point. Water sprinklers are arranged all along the belt.</p> 



Image: Water sprinklers arranged all along the belt To control the production of dust.



Image: Cloud Tech Mist sprayer at loading point
COMPLIED



(iv)

Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at loading and unloading points, etc.

At present four water sprinklers of capacity 20KL are being used for wetting the haul roads, quarry and dump yard to control the dust and fugitive emissions. Manual sweeping is being carried out all along the coal transport road from Parashurampalli to Area Hospital.

Wind barrier wall and vertical greenery system will be established as soon as pit head CHP is installed. Presently one mist sprayer is being operated to control dust emission at loading and unloading point. Long range mist sprayers will be installed very soon.



		 <p>Image: Water sprinklers used for wetting haul roads, quarry area etc.,</p> 
(v)	The company shall obtain approval of CGWA for use of groundwater for mining operations at its enhanced capacity of 3.75 MTPA (OC) and 0.48 MTPA (Underground).	<p>COMPLIED</p> <p>Ground Water clearance obtained from SGWA vides ltr.no.507/T/2018, Dtd: 11.12.2019.</p>
(vi)	Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.	<p>COMPLIED</p> <p>Continuous monitoring of occupational safety and other health hazards is being carried out and the corrective measures are being taken.</p> <p>All the workmen are trained in vocational training centers for improving safety in the work places and are undergone periodical medical examinations at regular intervals to monitor health hazards.</p> <p>No.of persons undergone Vocational Training (VTC) during 01.10.2021 to 31.03.2022 is 92.</p> <p>No.of persons have undergone PME during 01.01.2021 to 31.01.2021 is 473.</p>
(vii)	Persons of nearby villages shall be given training on livelihood and skill development to make them employable.	<p>COMPLIED</p> <p>Employment is being provided to the people of surrounding villages in out sourcing departments like housekeeping, tailoring, Beautician , Motor driving(LMV) & civil works etc.,</p> <p>Persons of nearby villages are given training on livelihood and skill development to make them employable.</p> <p>Some of the training courses for FY 2021-22 are,</p> <ol style="list-style-type: none"> 1.LMV Driving vocational training to 20 candidates of Venkateshwarlapalli village, BHPL . 2. Training in tailoring to 27members of Venkateshwarla palle village

3. Training in tailoring to 23 members of Dharmaraopet village.

4. Training in tailoring at Krishna colony, Subhash colony, 1000 quarters areas of 68 candidates of BHPL.

5. Maggam works training to 43 members at Subash colony and 1000 quarters.



Image: Training for Army physical exam.



Image: Training in Tailoring for Dharmaraopet villagers.

(viii) To ensure health and welfare of nearby villages, regular medical camps shall be organized at least once in six months.



Mobile Medical Camps being organized at surrounding villages like Basawarajupalli,, kondapur, Madhavarao palli etc., in every month and issues the necessary medicine.

Organised Medical Camp at Kondapur Village, BHP on 21.02.2021. During the Medical Camp 21 Doctors and 48 staff have participated and examined 611 villagers and issued necessary medicines to the identified patients.

Organised Medical Camp at Dharmaraopet Village, BHP on 11.05.2019. During the Medical Camp 25 Doctors have participated and examined 1489 villagers and issued necessary medicines to the identified patients.

Data is enclosed.



		 <p>Image: Medical camp images Kondapur and Dharmaraopet villages.</p>
(ix)	<p>Permission for diversion of road and power line from authorised statutory body</p>	<p>COMPLIED</p> <p>Permission obtained from NPDC vide ltr no: SE/OP/JS-BHPL/ADE(C) /AE(C)/F.No/D.No-750/19, dated: 31-10-2019 for diversion of the power lines.</p> <p>Permission for diversion of roads from Peddapur to Gollapally is under process. A letter was obtained from R&B department vide ltr no: DB/D1/EE/R&B/MLG/2019-20, 1876 Dated: 30-10-2019 stated that to handover the required land and expenditure to R&B department for diversion of roads. Sccl is being conducting survey for the required land.</p>
(x)	<p>Thick green belt of adequate width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution. No shrubs/bushes shall be planted and only trees of native species shall be planted</p>	<p>BEING COMPLIED</p> <p>So far 104 Ha of plantation has been done around the project that includes block plantation near UG mine and 1000 quarters area. In addition to it Avenue plantation and 3 tier plantation done all along the road upto PARKAL.</p> <p>The project is in initial stage of development with 96ha of quarry area and 85ha of dump area out of 1336ha. and the remaining land is undisturbed Hence after acquiring the total area thick green belt of adequate width at the final boundary in the down wind direction of the project site will be developed to mitigate/check the dust pollution by planting only trees of native species.</p> 

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3Tier plantation images all along Parkal road

(xi)	<p>Efforts shall be made for utilizing alternate sources of surface water, abandoned mines or else whatsoever and thus minimizing the dependability on a single source</p>
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PP agreed to comply

1. Solar Power:
 Total Solar Power Installed in the SCCL is approximately 209 Mega Watt (MW), out of which installed capacity in Bhupalpally Region is approximately 10 MW.

2. Fixing of Energy Meters:

- 20000 No.s fixed in quarters of SCCL.
- Target fix in all 46,000 No. of SCCL quarters

3. Lighting:

- Incandescent lamps are banned in quarters.
- Advised to replace LED lamps in place of Incandescent lamps.
- Conventional street / yard lighting is replaced with LED lights.

4. Energy efficient appliances:

- Made mandatory to purchase 5 star rated. house hold appliances.
- Purchased 5 star rated Air conditioners, Refrigerators, Fans, Coolers etc., in SCCL and also made propaganda among the employees.

5. Others:

- In OC mines, proposed to procure mobile Solar Lighting Masts with energy saving LED lights with Battery backup in place of diesel operated DG Set with conventional high capacity lights.
- Arranged to fix transparent acrylic sheets on roof top to utilize day light.
- Using timers in street lighting in all areas



10MW Solar plant at BHPL Region.

(xii) The activities and fund provisions for CER shall be made as per the guidelines issued by the ministry regarding CER on 1st May, 2018.

COMPLIED

The activities and fund provisions for CER were made as per the guidelines issued by the ministry regarding CER on 1st May, 2018.





The following activities were done ,



1. Providing materials related to Covid-19 prevention to the nearby villagers.
1. Masks (Distribution of 2000 masks @ Rs.25/mask)
2. Sanitizers (Distribution of 1000 sanitizers bottles @ Rs.50/sanitizer).
- 3) Development of ECO park near 1000Quarters, KTK OC-III Project.
4. Rural development works in the villages of Bhupalpally (providing drains and CC roads) from Pulluri Ramaiahpally to kompally village with an amount of 100 lakhs.
5. Drilling of bore wells in project affected villages WITH 20 LAKHS.
6. Supply and installation of 250 LPH capacity R.O Plants required for project affected villages with 2.67lakhs.
7. Procurement of LED flood lights and street lights for surrounding villages with 4.53lakhs.







CER activities for FY 2021-22.




		    <p>CER activities for FY 2021-22.</p>
(xiii)	No transportation of coal by road after establishment of railway line from Manuguru to Ramagundam.	Regular consultation is being done with the railway department for establishment of railway line from Manuguru to Ramagundam. No coal transportation after establishing railway line.
(xiv)	Compliance of conditions of the Roads and Building Department, Government of Telangana for diversion of the roads of Parasurampalli and Peddapur villages.	Permission for diversion of roads from Peddapur to Gollapally is under process. A letter was obtained from R&B department vide Itr no: DB/D1/EE/R&B/MLG/2019-20, 1876 Dated: 30-10-2019 stated that to handover the required land and expenditure to R&B department for diversion of roads. Sccl is being conducting survey for the required land.
(xvi)	Permission for diversion of Gundla Vagu Nallah i.e. surplus course of Yellareddy peta tank to Dharamraopet tank i.e 7.80 Km (proposed after 5 th year of commissioning of the mine) shall be taken from concerned Regulatory body	BEING COMPLIED In principle approval was obtained from the I&CAD department and survey of the GundlaVagu nallah is in progress by I&CAD department for issue of the permission. After obtaining permission the nallah will be diverted after 5 th year of the mine operation.
(xvii)	Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and also explore deployment of rock breakers of	COMPLIED As per the advice of the DGMS authorities Scientific study for carrying blasting operations in the project



	<p>suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to habitation/structures due to blasting activity.</p>	<p>was done by NIT/Surathkal and as per the recommendation of the study the blasting operations are being carried out in the project. Permission from DGMS will be obtained whenever the blasting operations approaches 500m of the habitants.</p> <p>SCCL will explore the possibility of deploying high capacity rock breakers if necessary to avoid blasting very near to habitation/structures.</p>
(xviii)	<p>Road from Mine to Mahadevpur — Parkal road (5.2 km), Mahadevpur — Parkal road (25.9km) and Parkal — Uppal road (25.3 km) shall be planted 3-tier plantation with native species of trees having broad leaves.</p>	<p>COMPLIED</p> <p>3-tier plantation has completed with 6000 native species of trees from KTK OC-III project to Parkal-Mahadevpur road (5.2 km) and 20000 native species of trees from Mahadevpur — Parkal road (20km) and remaining part Parkal-Uppal road will be planted in the next year.</p>  <p>3Tier plantation images all along Parkal road</p>
(xix)	<p>Mitigation measures proposed for villages in 500 mts shall be strictly complied for prevention and control of pollution.</p>	<p>COMPLIED</p> <p>12KL water tanker is being deployed along the coal transport road from KTK OC-III to KLP for dust suppression.</p> <p>Control blasting measures are being taken for prevention and control of pollution.</p> 


		<p>Water Tanker deployed along coal transport road.</p>  <p>Nonel system of blasting.</p>
(xx)	DGMS permission for height above 90m of OB Dump by PP and further stability study shall be conducted and recommendation of stability shall be implemented.	<p>COMPLIED</p> <p>As advised by DGMS authorities scientific study on stability analysis of slopes, OB Dumps and high walls was carried out by M/s NIT Surathkal and study recommended the dump height of 120 m above ground. All the recommendations of the study will be complied with.</p> <p>Further DGMS advised that OB dumps shall be formed and maintained as per the provisions laid down in Reg No.108 of Coal Mines Regulation and in this regard no specific permission is required.</p>
(xxi)	PP shall obtain No Objection Certificate from Archaeological Survey of India prior to commencement of mining operations.	<p>COMPLIED</p> <p>No objection certificate from Archaeological Survey of India for Ramappa temple obtained vide letter no F.No.T-19034/35/2019-M. dated:17.09.2020</p>
(xxii)	PP shall provide access to common people for accessing the land proposed to replace grazing land	<p>In the project of 1336.64Ha, 280.3Ha of grazing land is involved. At present quarry operations are being operated with 96 ha of quarry area and 85ha of dump area.</p> <p>The remaining land is undisturbed which is in access to the common people and being used for grazing. As the quarry progresses, plantation will be taken up and grazing land will be developed.</p>  <p>Undisturbed grazing land at the project.</p>
4.1	The grant of Environment Clearance (EC) is further subject to compliance of the Standard EC conditions as under:	
a.(i)	Statutory compliance The project proponent shall obtain forest	NOT APPLICABLE


	clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	
(ii)	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	NOT APPLICABLE
(iii)	The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).	
(iv)	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.	COMPLIED Obtained Consent for Establishment (CFE) vide ltr.no. 01/TSPCB/CFE/JP/RO-WGL/HO/2020-321, Dt: 24.06.2020 and Consent for Operation Obtained (CFO) vide ltr.no. 200422480317, Dt:28.09.2020
(v)	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	COMPLIED Project obtained Ground Water Clearance from CGWA vide ltr.no.507/T/2018, Dt: 11.12.2019.
(vi)	Solid/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.	WILL BE COMPLIED About 32.121 M.Cum of over burden extracted from the project till 30.09.2022 of which 1.805M.Cum was top soil and sumped separately at topsoil sumpyard and remaining dumped at external dumpyard of 382ha.. Other Solid/ hazardous waste generated in the mines are being disposed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016. Hazardous wastes like used oil with barrels, waste oil with barrels, used transformer oil with barrels, scrapped batteries, iron scrap, copper cables, scrapped cap lamp accumulators, empty oil and grease drums will be handled and disposed off in accordance with the procedure laid down in HWM Rules, 2016. Used oil, spent oil, batteries and copper cables shall be disposed off to the recyclers having valid registration from CPCB/TSPCB for recycling or recovery, whereas the empty oil and grease barrels will be detoxified prior to their disposal to outside agencies.
b. (i)	Air quality monitoring and preservation Continuous ambient air quality monitoring stations as prescribed in the statue be	Complied Continuous Ambient Air Quality Monitoring Station as prescribed in the statute was




	<p>established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.</p>	<p>established in the core zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the station was decided in consultation with the State Pollution Control Board by considering meteorological data, topographical features and environmentally and ecologically sensitive targets. In addition to the regular monitoring stations, online ambient air quality monitoring station was established at the core zone (project area) in Sep', 2022 and its display system is provided at mine office with the consent of PCB authorities. CAAQMS is connected to TSPCB server in June, 2022 and real time data is available on TSPCB website.</p>  <p>CAAQMS at KTK OC-III Project site office. Further regular post project air quality monitoring as per statue is being carried out in 6 locations of 3 core zone and 3 buffer zone every fortnight by M/s. EPTRI, Hyderabad in the following identified stations:</p> <ol style="list-style-type: none"> 1. KTK OC-III/KLP mine premises 2. KTK OC-III First aid shed 3. KTK OC-III SVEC Camp 4. Peddapur village 5. Dharmaraopet village 6. Basawarajupalli village <p>Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc is being carried out once in six months as per statue.</p>
(ii)	<p>The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.</p>	<p>COMPLIED</p> <p>The Ambient Air Quality monitoring in the core zone is being carried out by -M/s.EPTRI, Hyd to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data is being submitted to the Ministry/Regional Office and to the TSPCB with half yearly report.</p>

		 <p>Air quality monitoring at Peddapur village.</p>
(iii)	<p>Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM25) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board</p>	<p>COMPLIED</p> <p>Coal transportation is being carried only on permitted roads and through covered tarpaulin trucks. A water tankers of capacity 2KL and 12KL are being deployed for spraying water all along the coal transport roads to control the dust. Ambient Air Quality parameters are within the norms prescribed by Central/State Pollution Control Board.</p>   <p>Water tanker deployed for spraying water along coal transport road and haul roads.</p>
(iv)	<p>The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.</p>	<p>COMPLIED</p> <p>Transportation of coal is being carried out as per the provisions and route envisaged in the approved Mining plan. All safety precautions are being taken along the road and passing villages to mitigate the impact of sound, dust and accidents.</p>
(v)	<p>Vehicular emissions shall be kept under</p>	<p>COMPLIED</p>


	control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.	All the vehicles in the project are being regularly monitored, only the vehicles having 'PUC' certificate from authorized pollution testing centre are engaged in mining and allied activities.
(vi)	Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.	<p>COMPLIED</p> <p>In the coal yard, Crusher is provided with water sprinklers all along the belt and a cloud tech mist sprayer is provided at the discharge point in order to control the dust. Only Wet operated drills are being used to control dust.</p>  <p>IMAGE: Water sprinklers provided along belt.</p>
(vii)	Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environment friendly sustainable technology should be implemented for mitigating such parameters.	<p>WILL BE COMPLIED</p> <p>Project is in the initial stage. Proposed Coal handling plant will be established with all Environmental Control measures within due course of time.</p>
C.(i)	<p>Water quality monitoring and preservation</p> <p>The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.</p>	<p>PP agreed to comply</p> <p>The effluent discharge (mine waste water, workshop effluent) are being monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Telangana state Pollution Control Board. The results for the period of October, 2021 to March, 2022 are in the ANNEXURES given below</p>  <p>IMAGE: collection of water samples for monitoring.</p>


(ii)	The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-1A.11 (M) dated 27 th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	<p>PP agreed to comply</p> <p>The monitoring data is being uploaded and displayed on the company's website (https://scclmines.com/env/frmEnvClearance.aspx) The circular No.J-20012/1/2006-IA.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change is being complied.</p>
(iii)	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.	<p>COMPLIED</p> <p>Regular monitoring of ground water levels and ground water quality of the existing mines are being carried out by establishing a network of nineteen (19) existing wells and Four (4) piezometers enclosed as Annexures</p>  <p>IMAGE: Piezometric borehole at Jangupally village.</p> <p>Ground Water quality Monitoring data for the period of October, 2021 to March, 2022 pertaining to KTK OC-III Project is enclosed as Annexure.</p>
(iv)	Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.	<p>BEING COMPLIED</p> <p>Monitoring of water quality upstream and downstream of water bodies are being carried out once in three months and record of monitoring data is being maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office once in six months.</p> <p>Surface Monitoring data for the period of October, 2021 to March, 2022 pertaining to the project is enclosed as Annexure</p>
(v)	Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.	<p>BEING COMPLIED</p> <p>Only seepage water pumped out of the project is being utilized for mining operations. De-silting of nearby tanks will be taken up for augmentation of ground water resources.</p>

		 <p>IMAGE: Seepage water pumped out of the project is being utilized for dust spraying.</p> <p>Construction of rain water harvesting pits with an estimated amount of 10lakhs is in process.</p>
(vi)	<p>Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.</p>	<p>Complied.</p> <p>Catch drains for a length of 1500m have been made for proper collection of water into the 3No's settling ponds and to arrest silt from the runoff from OB dump.</p> <p>The water so collected is being utilized for dust suppression in the mine area, on haul roads and for green belt development etc.</p> <p>The garland drains are being maintained around the external dump and quarry for a total length of 1500m.</p> <p>The drains around coal heaps, quarry and settling ponds are being regularly de-silted and properly maintained.</p> <p>After completion of external dump, Toe wall will be constructed around it and plantation will be taken with native species.</p> <p>In underground workings sufficient sump capacity is provided for proper settling of silt material before discharging to surface streams</p>  <p>IMAGE: Settling pond at Mine Discharge.</p>



		 <p>Plantation along toe of dump.</p>
(vii)	<p>Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).</p>	<p>PP agreed to comply</p> <p>Construction of rain water harvesting pits with an estimated amount of 10lakhs is in process</p> <p>For the purpose of drinking water, R.O. Plants are being provided in the surrounding villages .</p> <p>Excess mine water of the underground working after treatment in slow sand filter beds are sent to nearby agriculture fields for irrigation and village tanks for augmentation of ground water.</p> <p>The project authorities will meet water requirement of nearby village(s) in case the village wells go dry due to de-watering of the mine.</p>
(viii)	<p>Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.</p>	<p>Complied</p> <p>ETP has been provided for area workshop and 3 Nos. of settling ponds were made for removal of coal fine and suspended solids at mine area.</p> <p>STP (1.5 MLD) is constructed at carlmarx Colony, BHUPALPALLY</p> <p>Water quality of mine discharge is being monitored at regular intervals before discharging into natural water course and results are in prescribed standards.</p>  <p>Settling pond at Ug section.</p>  <p>STP Image at Subhash colony.</p>
(ix)	<p>The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be</p>	<p>PP agreed to comply</p> <p>The water pumped out from the mine, after siltation, is being utilized for industrial purpose viz. dust suppression, watering the mine area, roads, green belt</p>

	<p>regularly desilted particularly after monsoon and maintained properly.</p>	<p>development etc. The drains are being regularly desilted particularly before and after monsoon and maintained properly.</p>   <p>IMAGE: Dust suppression by 20KL water tankers.</p>
(x)	<p>The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.</p>	<p>WILL BE COMPLIED</p> <p>The surface drainage plan including surface water conservation plan was prepared considering the area affected by the mining operations, presence of water bodies in the area and being implemented.</p> <p>One seasonal nallah Gundla vagu passes over the proposed quarry area. As per approved mining plan Diversion of Gundlavagu is planned in North-West directions over North-West of the proposed quarry. Proposed diversion length is 7.8KM. The diversion will be done as per permission of I&CAD Dept.</p> <p>The construction of embankment to prevent any danger against inrush of surface water into the mine will be as per the approved Mining Plan and as per the permission of DGMS.</p>
(xi)	<p>The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.</p>	<p>complied</p>
d.(i)	<p>Noise and Vibration monitoring and prevention</p> <p>Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules,2016 in the work environment. Workers engaged in blasting and drilling operations, operation of</p>	<p>PP agreed to comply</p> <p>Adequate measures are being taken for control of noise levels at the work environment.</p> <p>All the HEMM are provided with Sound Proof AC Cabins and Periodic planned preventive maintenance & engine tuning of HEMM and other</p>


	HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.	transport vehicles is being done. Workers engaged in noisy environment like blasting and drilling operations, operation of HEMM, etc are being provided with personal protective equipments (PPE) like ear plugs/muffs. Adequate awareness programme for users is being conducted and usage of PPE are being monitored during the inspections of officers and supervisors.
(ii)	Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.	Controlled blasting with nonels is being carried out in order to mitigate ground vibrations, fly rock, noise and air blast. Shot holes are being muffled whenever workings are reached closer proximity to any dwellings. Regular monitoring is being carried out by recording the blast induced ground vibrations in terms of Peak Particle Velocity (PPV), which are well below the permissible limits. Steps are being taken to limit the ppv with in the permissible limits. 
(iii)	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.	COMPLIED M/s. EPTRI, Hyd is conducting noise level survey as per the prescribed guide lines and the monitoring report is submitting to the Ministry and Regional office along with the half yearly report.  IMAGE: Noise monitoring at Peddapur village by M/s. EPTRI team. Noise Monitoring data for the period of april, 2022 to september, 2022 is enclosed as Annexure
e.(i)	Mining Plan Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.	NOTED Mining operations are being carried under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable

(ii)	Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).	NOTED Mining operations are being carried out as per the approved mining plan (including Mine Closure Plan) and by abiding all mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
(iii)	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.	Not applicable As no forest land is involved in this project.
(iv)	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.	<p>PP agreed to comply</p> <p>1. Solar Power: Total Solar Power Installed in the SCCL is approximately 209 Mega Watt (MW), out of which installed capacity in Bhupalpally Region is approximately 10 MW.</p> <p><u>2. Fixing of Energy Meters:</u></p> <ul style="list-style-type: none"> • 20000 No.s fixed in quarters of SCCL. • Target fix in all 46,000 No. of SCCL quarters <p><u>3. Lighting:</u></p> <ul style="list-style-type: none"> • Incandescent lamps are banned in quarters. • Advised to replace LED lamps in place of Incandescent lamps. • Conventional street / yard lighting is replaced with LED lights. <p><u>4. Energy efficient appliances:</u></p> <ul style="list-style-type: none"> • Made mandatory to purchase 5 star rated household appliances. • Purchased 5 star rated Air conditioners, Refrigerators, Fans, Coolers etc., in SCCL and also made propaganda among the employees. <p><u>5. Others:</u></p> <ul style="list-style-type: none"> • In OC mines, proposed to procure mobile Solar Lighting Masts with energy saving LED lights with Battery backup in place of diesel operated DG Set with conventional high capacity lights. • Arranged to fix transparent acrylic sheets on roof top to utilize day light. <p>Using timers in street lighting in all areas</p>  <p>10MW Solar plant at BHPL Region.</p>
f.(i)	<p>Land reclamation</p> <p>Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use</p>	<p>Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey is being carried out once in three years.</p>

	pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).	Land use Land cover study of core & buffer zone was last carried out by M/S Geosys Enterprise Solutions Private Ltd. Hyderabad, during the year 2021 in respect of KTK OC-III Project and the report was submitted to MOEFCC/Regional Office (RO) at Chennai vide Ref. No. BHP/ENV/46/2021/132, Dt.29.12.2021.
(ii)	The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.	<p>WILL BE COMPLIED</p> <p>The final mine void is 300mtrs as per the approved mine closure plan. All the engineering interventions will be provided for sustaining aquatic life.</p>
(iii)	The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/” post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCCIRO.	<p>COMPLIED</p> <p>Overburden is being dumped at earmarked external dump site within ML area as envisaged in the approved EMP. As on 31.07.2022, about 32.121 Mm3 of OB is dumped in external dump yard up to a maximum height of 60 m height with each deck of 30 m height. Progressive compliance status vis-a-vis the post mining land use pattern is being submitted to the MOEFCC/RO along with half yearly monitoring reports</p>
(iv)	Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.	<p>WILL BE COMPLIED</p> <p>SCCL is in the process of making MoU with m/s NTPC, Ramagundam for using fly ash in the void of one of the abandoned mines Ramagundam Area. Basing on the results, dumping of fly ash will be taken up in this mine considering the stability & safety parameters after obtaining permissions from the regulatory authorities.</p> <p>However, it is to submit that the fly ash is being utilized in the underground mines of SCCL for stowing of goaved out areas. Till now around 93.14 lakh cu.m of fly ash has been utilized for this purpose.</p>
(v)	Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in	<p>BEING COMPLIED</p> <p>The topsoil is temporarily stored at earmarked site and will be used for land reclamation and plantation purposes.</p> <p>So far 1.805 M Cum of top soil is removed and is stored for future use.</p> <p>So far Plantation has been done in a total area of 104 ha (including UG section). concurrently with the progress of mine.</p> <p>Active OB dumps will be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps will be vegetated with native</p>

	<p>line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.</p>	<p>flora species. Top soil preservation, land reclamation and plantation in excavated area will be taken up as per the approved mining closure plan. Monitoring and management of rehabilitated areas will continue until the vegetation becomes self-sustaining.</p>  <p>Active OB dumps stabilised with native species of plants to prevent erosion and surface run off.</p>
(vi)	<p>The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.</p>	<p>NOTED</p> <p>In the project of 1336.64Ha, 280.3Ha of grazing land is involved. At present project is in initial stage of development with 49ha of quarry area and 72 ha of dump area.</p> <p>The remaining land is undisturbed which is in access to the common people and being used for grazing. As the quarry progresses, plantation will be taken up and grazing land will be developed.</p>  <p>IMAGE: Undisturbed grazing land.</p>
g.(i)	<p>Green Belt</p> <p>The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.</p>	<p>Will be complied</p>
(ii)	<p>Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.</p>	<p>So far 104 Ha of plantation has been done around the project that includes block plantation near UG mine and 1000 quarters area. In addition to it Avenue plantation and 3 tier plantation done all along the road upto PARKAL.</p> <p>Greenbelt consisting of 3-tier plantation of width not less than 7.5 m will be developed all along the mine lease area as soon as the entire land is acquired.</p> <p>Species planted:</p>

		Hardwickia binata, Dendrocalamus strictus, Ficus religiosa, Pterocarpus santalinus, Azadirachta indica, Limonia acidissima, Ficus bengalensis, Aegle marmelos, Mitragyna parvifolia, Dalbergia latifolia, Pterocarpus marsupium, Syzygium cumini, Albizzia procera, Terminalia bellarica, Pongamia pinnata, Madhuka indica, Tamarindus indica, Pithecelobium dulce, Sterculia urens, Dalbergia sissoo, Bombax ceiba, Albizzia lebbek.
h.(i)	<p>Public hearing and Human health issues</p> <p>Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.</p>	Adequate illumination is being ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same is submitted to this ministry & it's RO on six-monthly basis.
(ii)	<p>The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.</p>	<p>COMPLIED</p> <p>SCCL is providing free medical treatment to all the workmen and their family members in the 7 area hospitals (with a total of 821 beds) and 21 dispensaries established in all the workings areas of the company.</p> <p>The annual expenditure incurred by SCCL in maintenance of health care facilities during 2021-22 is Rs.267.00 Crores.</p> <p>SCCL is also conducting regular health camps in villages located in the vicinity of project to study the health status of the people and is providing free treatment in SCCL hospitals.</p> <p>In addition, SCCL established eleven Initial Medical Examination (IME) /Periodical Medical Examination (PME) centres in the company, i.e., at Kothagudem, Manuguru, Yellandu, Godavarikhani, Sector - III Colony (Godavarikhani), Bellampalli, Ramakrishnapur, Mandamarri, Srirampur Bhupalpally and Sathupalli for conducting IME/PME of the employees including contract employees.</p> <p>All the PME Centers are equipped with necessary infrastructure for carrying out IME/PME and maintenance of data base.</p> <p>Every PME centre is provided with the facility for chest radiographs as per ILO guidelines with a set of ILO standard chest radiographs on Pneumoconiosis, lung function tests with computerized Spirometres of RMS make, and facilities for Audiometry with pure tone Audiometry equipment.</p> <p>All the Chest radiographs of the Initial and Periodical Medical examinations are being classified for detection, diagnosis and documentation of Pneumoconiosis in accordance with the ILO classification for Pneumoconiosis according to DGMS guidelines. All the PME Doctors employed except gynaecologists, paediatricians, surgeons and ortho surgeons are trained to read PME X-Rays in</p>

		accordance with ILO classification of Pneumoconiosis
(iii)	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	<p>COMPLIED</p> <p>Persons being deployed in mining operations are being provided with dust masks to wear and adequate training and information on safety and health aspects is being imparted.</p> <p>Dust masks are being provided to workmen exposed to dusty environment.</p> <p>Dust masks to the outsourced employees are being provided by respective OB contractual agencies.</p> <p>Adequate training is being imparted on safety and health aspects at the Mine Vocational Training Centre, BHUPALPALLY, during initial/ refresher training programmes and being educated regularly during safety education, talks etc. by concerned incharges.</p>
(iv)	Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land outsets shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.	<p>COMPLIED</p> <p>During the public hearing issues raised mainly on suitable employment for the nearby village youth and compensation for land and dwellings.</p> <ol style="list-style-type: none"> 1. Compensation for land and dwellings are provided as per LARR ACT 2013. 2. Employment is being provided to the people of surrounding villages in out sourcing departments like housekeeping, tailoring, Beautician , Motor driving(LMV) & civil works etc., The following are some of them, 1. Pre-Army training given to 45 members. in B.R Ambedkhar stadium, BHPL. 2. Volvo truck driving training given to 30 members in NOV-2019 at Bangalore. 3. Training in tailoring to 2 batches each of 25members of Jangupalli, Parasurampally villages in 2019-2020. 4. Training in tailoring to 25members of Venkateshwarla palle village. 5. Training on Volvo trucks given to 25memebers of Dharmaraopet village. 

		
(v)	<p>The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-A.11(M)dated29th October,2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.</p>	<p>NOTED</p> <p>All the mitigating measures provided in this Ministry's OM No.Z-11013/5712014-1A.11 (M)dated29th October,2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area' will be followed</p>
(i)	<p>Corporate Environment Responsibility</p> <p>The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.</p>	<p>CER WORKS</p> <ol style="list-style-type: none"> 1. Rural development works in the villages of Bhupalpally (providing drains and CC roads) from Pulluri Ramaiahpally to kompally village with an amount of 100 lakhs. 2. Drilling of bore wells in project affected villages WITH 20 LAKHS. 3. Supply and installation of 250 LPH capacity R.O Plants required for project affected villages with 2.67lakhs. 4. Procurement of LED flood lights and street lights for surrounding villages with 4.53lakhs.
(ii)	<p>The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/ deviation/violation of the environmental/ forest/ wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/ forest/wildlife norms/conditions and/or shareholders/stake holders.</p>	<p>COMPLIED</p> <ol style="list-style-type: none"> a) The SCCL has a well laid down Environment Policy approved by the Board of Directors. The environmental policy of SCCL is available in company's website i.e. www.scclmines.com. b) The SCCL has a well laid down Environment Policy approved by the Board of Directors consisting standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. The status of compliance of EC/FC is being appraised to SCCL Board of Directors once in three months as per Companies Act, 2013 by the project authorities. c) The SCCL has a well defined hierarchial system to deal with environmental issues and for ensuring compliance with the environmental clearance conditions.

(iii)	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	<p>COMPLIED</p> <p>A company level environment cell with qualified personnel headed by GM (ENV.) is established to monitor and guide in implementation of the environmental safeguards.</p> <p>An area level environmental cell headed by qualified environmental officer is established and functioning under the control of area General Manager to monitor and guide in implementation of the environmental safeguards.</p> <p>Apart from this, an area level Environmental Management Committee with multi disciplinary team has been constituted under the chairmanship of SO to GM.</p> <p>The area level Environmental Management committee has been constituted with following members.</p> <table border="1" data-bbox="873 730 1464 1157"> <tr><td>1</td><td>SO to GM</td><td>Chairman</td></tr> <tr><td>2</td><td>Project Officer</td><td>Member</td></tr> <tr><td>3</td><td>Area Engineer (E&M)</td><td>Member</td></tr> <tr><td>4</td><td>Area Civil Engineer</td><td>Member</td></tr> <tr><td>5</td><td>Area Env. Officer</td><td>Secretary</td></tr> <tr><td>6</td><td>Area Forest Officer</td><td>Member</td></tr> <tr><td>7</td><td>Area Estates Officer</td><td>Member</td></tr> <tr><td>8</td><td>Project Manager</td><td>Member</td></tr> <tr><td>9</td><td>Project Engineer</td><td>Member</td></tr> <tr><td>10</td><td>Project Surveyor</td><td>Member</td></tr> <tr><td>11</td><td>Project Env.Officer</td><td>Member</td></tr> <tr><td>12</td><td>Area hydrogeologist</td><td>member</td></tr> </table>	1	SO to GM	Chairman	2	Project Officer	Member	3	Area Engineer (E&M)	Member	4	Area Civil Engineer	Member	5	Area Env. Officer	Secretary	6	Area Forest Officer	Member	7	Area Estates Officer	Member	8	Project Manager	Member	9	Project Engineer	Member	10	Project Surveyor	Member	11	Project Env.Officer	Member	12	Area hydrogeologist	member
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(iv)	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	<p>COMPLIED</p> <p>The funds earmarked for the environmental safeguards are being kept in separate account and are being spent for environmental protection works only.</p> <p>Till now about Rs. 1,11,58,747/- was spent as environment capital expenditure.</p> <p>The year wise environmental expenditure is being submitted along with half yearly reports to the ministry and its regional office of MoEF&CC.</p>																																				
(v)	Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	<p>COMPLIED</p> <p>An environment management committee has been constituted at area level for monitoring compliance of EC condition and Self-environmental audit was conducted. Third party Environmental audit will be carried out after completion of 3years.</p>																																				
j.(i)	<p>Miscellaneous</p> <p>The project proponent shall make public the environmental clearance granted for</p>	<p>COMPLIED</p> <p>This condition was complied. An advertisement was given on 03.05.2020 in Hans India (English) and</p>																																				

	<p>their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.</p>	<p>Namaste Telangana (Telugu local language) daily news papers widely circulated around the project.</p>
(ii)	<p>The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.</p>	<p>COMPLIED</p> <p>Clearance copy is submitted for display to the following :</p> <ol style="list-style-type: none"> 1. Distri KTK OC-III Project's Environmental ct Collector, Jayashankar Bhupalpally vide ltr.no:BHP/ENV/46/ 2. Environmental Engineer, T.S.PCB, Warangal vide2020/39,DT.29.04.2020 ltr.no:BHP/ENV/46/2020/46,DT.29.04.2020 3. Revenue Divisional Officer, Jayashanker Bhupalpally District vide ltr.no:BHP/ENV/46/2020/39,DT.29.04.2020 4. Tehsildar Office, Ghanpur Mandal, Jayashanker Bhupalpally District vide ltr.no:BHP/ENV/46/2020/48,DT.29.04.2020 5. District Industries Officer, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/40,DT.29.04.2020 6. Gram Panchayat Office, Gollapalli Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/62,DT.29.04.2020 7. Gram Panchayat Office, Gurrampet Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/58,DT.29.04.2020 8. Gram Panchayat Office, Seetharamapuram Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/56,DT.29.04.2020 9. Gram Panchayat Office, Kondapur Village, Jayashankar Bhupalpally District. vide ltr.no:BHP/ENV/46/2020/50,DT.29.04.2020 10. Gram Panchayat Office, Appayapalli Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/57,DT.29.04.2020 11. Gram Panchayat Office, Kondarajreddy Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/54,DT.29.04.2020 12. Gram Panchayat Office, Madhavaopalli Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/63,DT.29.04.2020 13. Gram Panchayat Office, Nagarampalli Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/61,DT.29.04.2020 14. Gram Panchayat Office, Dharmaraopet Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/51,DT.29.04.2020 15. Gram Panchayat Office, Venkateshwarapalli Village, Jayashankar Bhupalpally District vide ltr.no:BHP/ENV/46/2020/55,DT.29.04.2020 16. Gram Panchayat Office, Peddapur Village, Jayashankar Bhupalpally District vide

		<p>ltr.no:BHP/ENV/46/2020/52,DT.29.04.2020 17. Gram Panchayat Office, Jangupalli Village, Jayashankar Bhupalpally District vide</p> <p>ltr.no:BHP/ENV/46/2020/49,DT.29.04.2020 18. Gram Panchayat Office, Parashurampalli Village, Jayashankar Bhupalpally District vide</p> <p>ltr.no:BHP/ENV/46/2020/59,DT.29.04.2020 19. Gram Panchayat Office, Basawarapalli Village, Jayashankar Bhupalpally District vide</p> <p>ltr.no:BHP/ENV/46/2020/60,DT.29.04.2020 20. Chief Executive Officer, Zilla Parishad Warangal District vide</p> <p>ltr.no:BHP/ENV/46/2020/41,DT.29.04.2020 21. Municipal Commissioner, Bhupalpally Municipality, Jayashankar Bhupalpally District vide</p> <p>ltr.no:BHP/ENV/46/2020/65,DT.02.05.2020</p>
(iii)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	<p>COMPLIED</p> <p>Compliance of the environment clearance conditions has been updated in website on SEP 2022</p> <p>WEBHYD.SCCLMINES.COM</p>
(iv)	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	<p>COMPLIED</p> <p>CAAQMS has been installed at the Project site for monitor the, NOx display of the same is at project criteria pollutants level namely; PM10, SO2 office for disclosure to the public and on the website of the TSPCB.</p> 
(v)	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment. Forest and Climate Change at environment clearance portal.	<p>COMPLIED</p> <p>Compliance of the stipulated environment clearance conditions has been updated in website of the ministry of Environment. Forest and Climate Change at environment clearance portal on sep-2022</p>
(vi)	The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.11(M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the	<p>Complied</p>

	part of mine lease areas or habitations and villages are surrounded by the mine lease area'.	
(vii)	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	COMPLIED Environmental Statement will be sent to TSPCB in form-V every year
(viii)	The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.	COMPLIED Regarding commencement of mining operations information was given to MOEF&CC vide ltr No: BHP/KTKOC-III/P-5/2020/1201, Dtd: 21.12.2020.
(ix)	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	BEING COMPLIED All the CFE & CFO conditions issued by TSPCB, are being implementing in the project.
(x)	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	BEING COMPLIED All the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and commitment made during presentation to the Expert Appraisal Committee will be complied.
(xi)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.	NOTED No further expansion or modifications in the project will be carried out without prior approval of MoEF&CC.
(xii)	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	NOTED The data provided will be true and project proponent will not provide any false data.
(xiii)	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	NOTED All the EC conditions will be implemented in true spirit.
(xiv)	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	NOTED Will implement the additional conditions if stipulated by the Ministry.
(xv)	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	NOTED Project authorities will extend full cooperation to RO MoEF&CC and will furnish all the required data/ information/ monitoring reports.
(xvi)	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act,	BEING COMPLIED All the measures are being taken to avoid soil

	1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules made their under and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	contamination, contamination of ground water & surface water and occupational and other diseases due to the mining operations. CFE and CFO were obtained for the project under air and Water Acts. Insurance policy is in force under Public Liability Insurance Act, 1991. Vide insurance policy no.:550200492210000013, From: 30/04/2022 To 29/04/2023.
5.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report as well as during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented by the EC in letter and spirit.	BEING COMPLIED All the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and commitment made during presentation to the Expert Appraisal Committee will be complied.
6.	The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection	COMPLIED From TSPCB, Hyderabad obtained 1.Consent for Establishment (CFE) vide lt.no:01/TSPCB/CFE/JB/RO-GL/HO/2020-321, Dt: 24.06.2020 2. Consent for Operation(CFO)vide ltr.no:200422480317, Dt:28.09.2020 3. From CGWA Ground Water Clearance vide ltr.No:507/T/2018, Dt: 11.12.2019 4. From Archaeological Survey of India vide ltr.no:F.No.T-19034/35/2019-M.
7.	Any appeal against this Environment Clearance (EC) shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	NOT APPLICABLE No appeal against KTK OC-III Project's Environmental Clearance
8.	The coal company/project proponent shall be liable to pay the compensation against illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others.	NOT APPLICABLE No illegal mining will be carried out and if any found by the State Governments at any point of time the project proponent will pay the compensation against the illegal mining as per the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others.
9.	The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble	Not Applicable

	Supreme Court.	
10.	This Environment Clearance (EC) shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.	Not Applicable

KTK OC-III PROJECT

PART – II

1. Production Details

Sl. No	Year	Coal (in MT)		Coal (in MT)	
		As per EC by Opencast	Actual	As per EC by Underground	Actual
1	2019-2020	3.75	Nil	0.48	0.278
2	2020-2021	3.75	0.045	0.48	0.252
3	2021-2022	3.00	0.354	0.48	0.205
4	2022-2023	3.00	0.231	0.48	0.092

2. Topsoil Management (in L.Cu.m)

1	Total Topsoil	:	5.40 M.M ³
2	Topsoil removed so far	:	1.805 M.M ³
3	Topsoil stored in temporary stockyard	:	1.721 M.M ³
4	Topsoil spread on Dumps	:	0.084 M.M ³
5	Topsoil removed in last six months	:	0.389 M.M ³

3. Overburden Management (in L.Cu.m)

1	Total Overburden	:	972.54 M.M ³			
2	Total OB removed since inception	:	32.121 M.M ³			
3	Total OB removed during last six months	:	7.872 M.M ³			
4	Details of External OB dumps	:	Area (in Ha)	Quantity in (M.Cu.M)	Height (m)	Overall slope
	Dump-1	:	384	2.79	+60	30
	Dump-2	:	--	--	--	-
	Dump-3	:	--	--	--	--
5	Details of Internal dump (Backfilling)	:	--	--	--	--

4. Plantation details(KTK OC-III/KLP):

1	No of plants planted during last six months/ last year	-
2	Area covered in Ha	-
3	Expenditure incurred in Rs. lakhs	=
4	Total area brought under plantation so far in Ha	104 Ha/UG section.
5	Total no of plants planted so far since inception	130008
6	Species of plants planted	Clones,Sinduga,Kanuga,Neem, Naravepa, Naredu, Ravi, Buruga,Usiri, Nemali nara, Veduru, Eppa etc.
7	Seeds sown so far	-
8	Small plants planted so far	-
9	Total expenditure in Rs. lakhs -	6126125

5. Water Balance Statement (KTK OC-III):

SI	Description	Quantity in KLD
1	Average quantity of water pumped out of the mine	550
2	Water used for drinking/bathing and other industrial requirement	300
3	Water used for dust suppression	100
4	Water used for plantation	50
5	Water supplied for nearest township/village for domestic purpose	50
6	Excess water let out	50

6. Soil Erosion Control Measures:

1	Toe Walls	Nil
2	Garland drains	A trench is made all around the quarry.
3	Settling ponds	Nil
4	Gabions	Nil
5	Cribs	Nil
7	Rock Fill Dams	Nil

7. Micro-meteorological Monitoring:

Micro-meteorological station was installed at Bhupalpalli GM Office. The summary of the monitoring from April, 2022 to September, 2022 as follows:

Month	Wind Speed (m/s)			Temperature (°C)			Relative Humidity (%)			Rainfall (mm)	
	Mean	Max	Calm %	Mean	Max	Min	Mean	Max	Min	Total	Hourly highest
April, 2022	2.4	6.0	8.19	30.9	43.8	18.2	80.7	99.0	22.0	0.0	0.0
May, 2022	1.7	5.8	22.85	26.8	41.6	12.0	70.6	99.5	21.0	0.0	0.0
June, 2022	1.6	9.3	22.22	32.3	45.5	20.0	59.9	99.5	18.0	7.4	1.0
July, 2022	2.2	7.2	6.18	26.9	46.0	23.3	80.7	99.8	19.0	32.3	1.3
August, 2022	2.5	7.0	25.4	28.8	42.2	21.2	66.6	98.9	29.5	8.8	1.3
September, 2022	1.8	7.2	24.58	32.8	44.2	22.2	23.1	98.1	65.1	15.0	2.0

8. Surface Water and Ground Water Quality Monitoring:

WATER QUALITY

Selection of Sampling Locations

A total of 4 water samples i.e., 1 sample from surface and 3 samples from groundwater were collected and analyzed for various physico-chemical and bacteriological parameters.

Table 4.1 Surface Water Sampling Locations

Sl. No.	Sampling code	Date of sampling		Sampling Location	Latitude	Longitude
		1 st quarter	2 nd quarter			
1.	SW-4	31.05.2022	04.08.2022	Peddapur village tank	N 18°22' 18.9"	E 79° 54' 32.5"

Table 4.2 Groundwater Sampling Locations

Sl. No.	Sampling code	Date of sampling		Sampling Location	Latitude	Longitude
		1 st quarter	2 nd quarter			
1.	GW-12	31.05.2022	03.08.2022	Peddapur village	N 18°22' 26.7"	E 79° 54' 21.1"
2.	GW-13	31.05.2022	04.08.2022	Parasurampalli village	N 18°21' 40.1"	E 79° 53' 32.4"
3.	GW-14	31.05.2022	04.08.2022	Basavarajupalli village	N 18°21' 59.9"	E 79° 52' 57.8"

Table 4.3 Physico-Chemical and Bacteriological Characteristics of Surface Water

Table 4.3.1 Physico-Chemical and Bacteriological Characteristics of Surface Water as per CPCB Water Quality Criteria

S.No.	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT	
				Class A	Class B	Class C	Class D	Class E	SW-4 (Peddapur village tank)	
									1 st Quarter	2 nd Quarter
1	pH	-	4500-H+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	7.3	7.7
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	564	220
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	6.0	5.2
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	2.8	3.5
5	Total Coliforms	MPN/100mL	9221 B	50 or less	500 or less	5000 or less	-	-	220	280
6	Free Ammonia (as N)	mg/L	4500-NH ₃ -F	-	-	-	1.2 mg/L or less	-	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.25	0.16
8	SAR	-	-	-	-	-	-	Less than 26	1.33	0.60

Table 4.3.2 Physico-Chemical Characteristics of Surface Water at Selected Locations in the Study Area

S. No	Parameters	Unit	Test Method	SW-4 (Peddapur village tank)	
				1 st Quarter	2 nd Quarter
1.	Colour	Pt-co	2120. B	5	10
2.	Odour	TON	2150. B	No odour observed	No odour observed
3.	Temperature	°C	2550. B	25.8	25.3
4.	Total Dissolved Solids at 180° C	mg/L	2540.C	334	126
5.	Total Suspended Solids at 105° C	mg/L	2540. D	21	27
6.	Chemical Oxygen Demand	mg/L	5220. D	18	14
7.	Chlorides as Cl ⁻	mg/L	4500-Cl ⁻ .B	113	15
8.	Sulphates as SO ₄ ²⁻	mg/L	4500-SO ₄ ²⁻ .E	48	15
9.	Fluoride as F ⁻	mg/L	4500-F ⁻ .C	0.33	0.18
10.	Calcium as Ca	mg/L	3500-Ca.B	27	20
11.	Magnesium as Mg	mg/L	3500-Mg.B	21	6
12.	Sodium as Na	mg/L	3500-Na.B	38	12
13.	Potassium as K	mg/L	3500-K.B	1.1	1.05
14.	Nitrites as NO ₂	mg/L	4500-NO ₂ ⁻ .B	BDL	BDL
15.	Nitrates as NO ₃	mg/L	4500-NO ₃ ⁻ .B	22	1.8
16.	Total Phosphates	mg/L	4500-P-D	BDL	BDL
17.	Ammonical Nitrogen as NH ₃ -N	mg/L	4500-NH ₃ -C	BDL	BDL
18.	Oil & Grease	mg/L	5520. B	<1	<1
19.	Fecal Coliform	MPN/100mL	9221 E	11	23
20.	Zinc as Zn	mg/L	3120. B	0.31	0.08
21.	Iron as Fe	mg/L	3120. B	0.73	0.26
22.	Arsenic as As	mg/L	3120. B	BDL	BDL
23.	Lead as Pb	mg/L	3120. B	BDL	BDL
24.	Cadmium as Cd	mg/L	3120. B	BDL	BDL

S. No	Parameters	Unit	Test Method	SW-4 (Peddapur village tank)	
				1 st Quarter	2 nd Quarter
25.	Total Chromium as Cr	mg/L	3120. B	BDL	BDL
26.	Nickel as Ni	mg/L	3120. B	BDL	BDL
27.	Copper as Cu	mg/L	3120-B	BDL	BDL
28.	Selenium as Se	mg/L	3120-B	BDL	BDL

Table 4.4 Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area

Table 4.4.1 Organoleptic and Physical Parameters

Sl. No.	Parameters	Unit	Test Method	IS: 10500:2012 Requirement (Acceptable Limit)	IS: 10500:2012 Permissible Limit in the absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st quarter	2 nd quarter	1 st quarter	2 nd quarter	1 st quarter	2 nd quarter
1.	Colour	Pt-co-	2120. B	5	15	<5	<5	<5	5	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.	Agree.	Agree.
3.	pH	-	4500-H+B	6.5 to 8.5	No relaxation	7.1	8.2	7.5	8.4	7.7	8.0
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.4	0.29	0.48	0.26	0.36	0.39
6.	Total Dissolved Solids at 180° C	mg/L	2540.C	500	2000	694	508	502	780	910	1110

Table 4.3.2 General Parameters Concerning Substances Undesirable in Excessive Amounts

Sl. No.	Parameters	Unit	Test Method	IS: 10500:2012 Requirement (Acceptable Limit)	IS: 10500:2012 Permissible Limit in absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st quarter	2 nd quarter	1 st quarter	2 nd quarter	1 st quarter	2 nd quarter
1	Calcium as Ca	mg/L	3500-Ca.B	75	200	82	44	44	40	94	70
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	64	34	32	27	68	49
3.	Chlorides as Cl ⁻	mg/L	4500-Cl ⁻ .B	250	1000	71	85	64	245	154	258
4.	Sulphates as SO ₄ ²⁻	mg/L	4500-SO ₄ ²⁻ .E	200	400	96	86	74	94	84	130
5.	Fluoride as F ⁻	mg/L	4500-F ⁻ .C	1.0	1.5	0.82	0.78	0.62	0.85	0.74	0.93
6.	Nitrates as NO ₃	mg/L	4500-NO ₃ ⁻ .B	45	No relaxation	37	39	42	48	44	53
7.	Residual free chlorine	mg/L	4500-Cl ⁻ .B	0.2	1.0	BDL	BDL	BDL	BDL	BDL	BDL
8.	Phenolic compounds as C ₆ H ₅ OH	mg/L	5530-D	0.001	0.002	BDL	BDL	BDL	BDL	BDL	BDL
9.	Total Alkalinity as CaCO ₃	mg/L	2320. B	200	600	205	200	210	200	435	450
10.	Total Hardness as CaCO ₃	mg/L	2340. C	200	600	469	250	242	210	515	375
11.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.09	0.05	0.09	0.04	0.06	0.06
12.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.19	0.26	0.26	0.38	0.19	0.19
13.	Boron as B	mg/L	3120-B	0.5	2.4	0.24	0.31	0.2	0.24	0.27	0.14
14.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.47	0.51	0.45	0.52	0.59	0.38
15.	Zinc as Zn	mg/L	3120-B	5	15	0.16	0.11	0.18	0.23	0.24	0.18
16.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL	BDL	BDL	BDL	BDL
17.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL	BDL	BDL	BDL	BDL
18.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
19.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL

Table 4.3.3 Parameters Concerning Toxic Substances

S. No	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st Quarter	2 nd Quarter	1 st Quarter	2 nd Quarter	1 st Quarter	2 nd Quarter
1	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
2	Cyanide as CN-	mg/L	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
3	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
4	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
5	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
6	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL	BDL	BDL	BDL	BDL
7	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
8	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
9	Pesticides: α-BHC, β-BHC, γ-BHC, δ-BHC, o, p-DDT, p, p'-DDT, Endosulfan, β- Endosulfan, Aldrin, Dieldrin	µg/L	6630. D	Absent	0.001	ND	ND	ND	ND	ND	ND
	2,4-D, Carbaryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND	ND	ND	ND
10	Polyaromatic Hydrocarbons (PAH's): Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	--	--	ND	ND	ND	ND	ND	ND

Table 4.3.4 Bacteriological Quality of Drinking Water

Sl. No.	Parameters	Unit	Test Method	IS: 10500:2012 Requirement (Acceptable Limit)	IS: 10500:2012 Permissible Limit in absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st quarter	2 nd quarter	1 st quarter	2 nd quarter	1 st quarter	2 nd quarter
1.	Total Coliforms	MPN/100 mL	9221B	-	-	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
2.	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8

4.2 Summary of Water Quality

4.2.1 Surface Water Quality

Comparison with CPCB Water Quality Criteria

The major findings are as follows: pH values were found to be in the range 7.3 & 7.7 in SW-4 sample. Total coliforms and fecal coliforms were present in the surface water sample collected in the study area. Presence of total coliforms, fecal coliforms shows contamination from fecal matter or sewage entry and not suitable for direct drinking purpose and needs chlorination before treatment.

In accordance with CPCB water quality criteria, parameters studied were pH, DO, BOD and total coliforms. It may be observed that the surface water sample has DO values 6.0 & 5.2mg/L and BOD was found to be 2.8 & 3.5 mg/L in given sample. Total coliforms are recorded as 220 & 280 MPN/100ml and fecal coliforms are recorded as 11 & 23 MPN/100ml in the given sample.

The given sample fall under the CPCB water quality criterial Class-B (Outdoor bathing (Organized)) as the DO is satisfactory, BOD is within the limit and Total coliforms are less than 500 MPN/100 ml. BOD is slightly high and this may be due to some natural organic matter like leaves and mud and can be useful once filtered.

In addition to the CPCB criteria parameters, another 28 parameters were also investigated and there is no abnormality observed in the given sample.

4.2.2 Groundwater Quality

The analysis reports show pH values range 7.1 & 8.4 in GW-12, 13, 14 samples collected within the study area. Some water samples are exceeding the acceptable limits of IS: 10500:2012 but within the permissible limits. Because of underground strata, the parameters might have exceeded.

TDS concentrations are in the range 502 – 1110, are observed to be above the acceptable limit of 500mg/L but within the permissible limit of 2000mg/L at all locations. Calcium concentrations are above the acceptable limit of 75mg/L but within the permissible limit of 200mg/L at GW-12, 14 (82, 94mg/L, 1st quarter), and within the acceptable limit at other quarters. Magnesium concentrations are above the acceptable limit of 30mg/L but within the permissible limit of 100mg/L at all quarters except GW-13 (27mg/L, 2nd quarter) is within the acceptable limit.

Nitrates concentrations are above the permissible limit of 45mg/L at Parasurampalli GW-13 (48mg/L, 2nd quarter) Basavarajupalli GW-14 (53mg/L, 2nd quarter) and within the limit in other quarters. Chlorides concentrations are above the acceptable limit of 250mg/L but within the permissible limit of 1000mg/L at GW-14 (258mg/L, 2nd quarter) and within the acceptable limit in other quarters. Fluorides, Sulphates, Iron concentrations were within the acceptable limits at all the locations.

The total alkalinity concentrations are in the range 200 - 450mg/L and Total hardness concentrations are in the range 210 - 515mg/L. Samples collected are above the acceptable limit of 200mg/L but within the permissible limit of 600mg/L at all locations GW-12, 13, 14.

Groundwater quality at Peddapur village (GW-12):

In this location, all the parameters are well within the limits. So, the groundwater may be used for drinking purpose in the absence of any alternative drinking water source as few parameters exceeded the acceptable limits; however, they are well within in the permissible limits. Groundwater at this location possesses temporary hardness due to the presence of bicarbonates of calcium and magnesium which can be removed by boiling water.

Groundwater quality at Parasurampalli village (GW-13) & Basavarajupalli village (GW-14):

In these locations, only Nitrates have exceeded the limit in 2nd quarter. Excess nitrate concentrations may be due to the fertilizers runoff from the agricultural areas, as well as the untreated disposal of domestic and industrial wastewater into the environments. Whenever these concentrations exceed the permissible limit, by deploying reverse Osmosis, electro dialysis Distillation, Ion-Exchange procedures and Solar Still, they may be removed.

The graphical presentation for Nitrates exceeding the limits is shown in Fig 4.1.

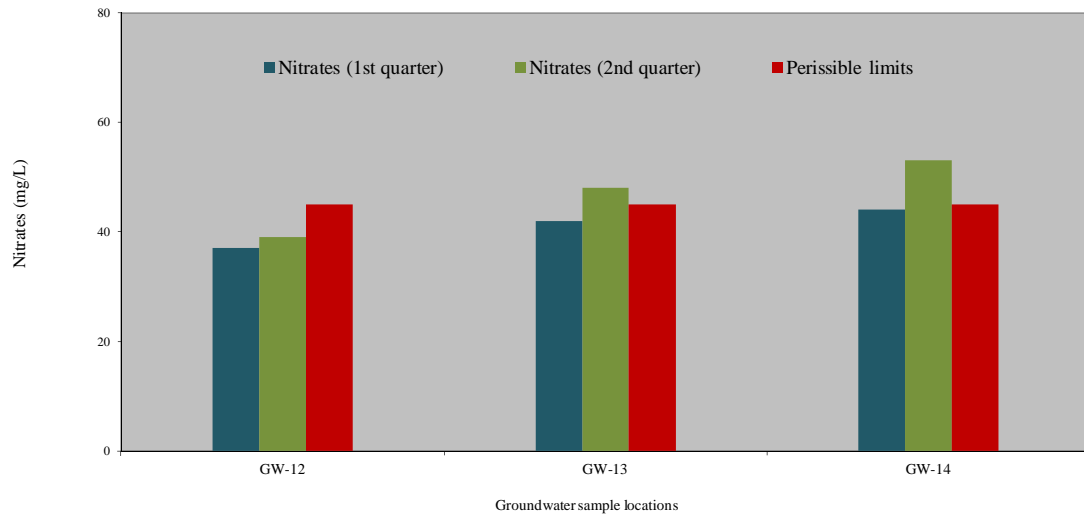


Fig:4.1 Graphical presentation of Nitrates Concentrations

8. Ambient Air Quality Monitoring:

Parameters:

In accordance with MoEF Notification, GSR-742 (E), dt. 25.09.2000 and National Ambient Air Quality Standards, the concentration of Suspended Particulate Matter (PM₁₀ and PM_{2.5}), Sulphur Dioxide (SO₂) and Oxides of Nitrogen (NO_x) is being monitored at work zone locations and also in nearby villages to assess the impact of mining operations on surrounding habitation.

Respirable Dust Sampler is used for monitoring of PM₁₀, SO₂ and NO_x and Ambient Fine Dust Sampler is being used for monitoring of PM_{2.5}. SCCL is carrying out post-project environmental monitoring through EPTRI, Hyderabad, a CPCB recognized and NABL accredited laboratory. EPTRI has also established laboratories in SCCL mining areas for analyzing critical parameters in the field.

Frequency of Monitoring:

Air quality monitoring is being carried out at a frequency of once in a fortnight (24 hourly sampling) at the identified locations near the dust generating sources.

Monitoring data of AAQ:

The summary of the monitoring from April, 2022 to September, 2022 follows:

Location	Direction & Distance	PM10			
		Min.	Max.	98%tile	STD
KTK OC-III Project	Core Zone	82.0	169.0	168	250
KTK OC-III SVEC CAMP	Core Zone	85.0	176.0	175	250
KTK OC-III First Aid shed	Core Zone	94.0	192.0	191	250
Peddapur Village	Buffer Zone	47.0	69.0	68.8	100
Dharmaraopet Village	Buffer Zone	43.0	77.0	76.8	100
Basavarajupalli Village	Buffer Zone	53.0	75.0	74	100
Location	Direction & Distance	PM2.5			
		Min.	Max.	98%tile	STD
KTK OC-III Project	Core Zone	38.6	54.5	54	-
KTK OC-III SVEC CAMP	Core Zone	35.5	58.2	57.8	
KTK OC-III First Aid shed	Core Zone	42.2	62.3	62	
Peddapur Village	Buffer Zone	24.8	38.2	38	60
Dharmaraopet Village	Buffer Zone	25.6	42.1	42	60
Basavarajupalli Village	Buffer Zone	29.2	39.4	39	60
Location	Direction & Distance	SO2			
		Min.	Max.	98%tile	STD
KTK OC-III Project	Core Zone	7.6	13.7	13	120
KTK OC-III SVEC CAMP	Core Zone	8.1	12.1	11.7	120
KTK OC-III First Aid shed	Core Zone	8.0	11.1	11	120
Peddapur Village	Buffer Zone	7.3	10.6	10	80
Dharmaraopet Village	Buffer Zone	7.6	10.2	10	80
Basavarajupalli Village	Buffer Zone	7.2	10.1	9.7	80
Location	Direction & Distance	NO2			
		Min.	Max.	98%tile	STD
KTK OC-III Project	Core Zone	10.5	21.9	21	120
KTK OC-III SVEC CAMP	Core Zone	11.3	18.0	17	120
KTK OC-III First Aid shed	Core Zone	12.2	14.4	14	120
Peddapur Village	Buffer Zone	11.0	14.5	14	80
Dharmaraopet Village	Buffer Zone	11.5	14.1	13	80
Basavarajupalli Village	Buffer Zone	11.3	14.8	14	80

(All values in $\mu\text{g}/\text{m}^3$)

The air quality data monitored at the work zone locations and surrounding residential areas indicate that PM_{10} concentration is within the stipulated limits at all locations, where the max concentration recorded was $102 \mu\text{g}/\text{m}^3$. The $\text{PM}_{2.5}$ concentration is within the stipulated limits at all locations. The SO_2 and NO_x levels are well within the limits at all the locations. The fortnightly air quality data monitored during six months period starting from April, 2022 is enclosed as **Annexure-I**.

SCCL is taking following control measures in the KTK OC III Project for air pollution control including reduction of particulate emissions:

AIR POLLUTION CONTROL MEASURES:

- ❖ Effective water spraying is being maintained at Bank heads and also at bunkers.
- ❖ LPG gas is supplied free of cost to the employees.
- ❖ Sand filter beds of capacity 50,000 gallons are maintained at mine premises for treatment of mine discharge. Excess water from filter beds is let out for agriculture lands and village tanks.
- ❖ In this area two STPs of capacity 3.0 MLD are working. Around 1800 KLD sewage water treated in the STPs and the same was let out to nearby Forest tank.
- ❖ Plantation is developed in the mine premises and in the mine take area.
- ❖ Water tanker is arranged for water spraying for dust suppression along the coal transport road.
- ❖ Coal transport trucks carrying coal is covered with tarpaulins.

9. Water Quality Monitoring:

The impact of the mining activities on the water environment was assessed by studying the quality of groundwater and surface water bodies in the study area. The sampling locations were selected considering their proximity to the project sites. A total of 6 water samples i.e., 4 samples from surface and 2 samples from groundwater were collected and analyzed for various physico-chemical and bacteriological parameters.

Parameters:

The ground water quality results are compared with IS: 10500 standards of groundwater quality and surface water quality with IS 2296, 1982 and CPCB Water Quality Criteria, Class- A (Drinking Water Source without conventional treatment but after Disinfection), Class – B (outdoor bathing organized) and Class – C (Drinking Water Source with conventional treatment and after Disinfection, Class – C (Drinking Water Source with conventional treatment and after Disinfection, Class –D propagation of wild life fisheries and Class-E (Irrigation, Industrial cooling, controlled waste disposal).

Effluent water quality monitoring involves periodical assessment of quality of mine discharge water, treated workshop effluents, CHP effluent, treated colony effluents, ground water and surface water. pH, Total Suspended Solids (TSS), Chemical Oxygen demand (COD) and Oil & Grease are being periodically monitored in effluents as per the Environmental Standards for coalmines, GSR - 742 (E) dated 25.09.2000.

All the parameters as given in Part-A of General Standards for Discharge of Environmental Pollutants, GSR 801 (E) EPA 1986 prescribed by CPCB is being analyzed for all the effluents, in addition to the above parameters, once in a year for assessing the overall quality of effluents.

Frequency of monitoring:

Monitoring of effluent water samples for four critical parameters is being done at a frequency of once in a fortnight. Effluents are also analyzed in every fortnight, whereas ground water (all parameters), surface water (all parameters) are being analyzed once in every quarter.

Monitoring Data:

The surface water, ground water quality and effluent quality data monitored during April, 2022 to September, 2022 is enclosed as **Annexure-II**. The summarized data on effluent water quality in respect of four critical parameters stipulated for coal mines is furnished hereunder.

Effluent Quality Monitoring:

Sl. No.	Location	Parameter	Min.	Max.	Standard
1.	KTK OC-III Mine Discharge	P^H	7.4	7.9	5.5 - 9.0
2.	KTK OC-III Settling Tank Outlet		7.6	8.2	5.5 - 9.0
1.	KTK OC-III(KTK LW) Mine Discharge	TSS (mg/l) 105⁰ C	24	49	100mg/lit
2.	KTK OC-III Settling Tank Outlet		24	63	100mg/lit
1.	KTK OC-III(KTK LW) Mine Discharge	TDS at 180⁰ C	791	1015	
2.	KTK OC-III Settling Tank Outlet		738	1138	
1.	KTK OC-III(KTK LW) Mine Discharge	COD (mg/l)	11	34	250mg/lit
2.	KTK OC-III Settling Tank Outlet		23	49	250mg/lit
1.	KTK OC-III(KTK LW) Mine Discharge	BOD	2.2	4.6	30 mg/L
2.	KTK OC-III Settling Tank Outlet		2.4	9.1	30 mg/L
1.	KTK OC-III(KTK LW) Mine Discharge	Oil & Grease (mg/l)	1.2	2.2	10mg/lit
2.	KTK OC-III Settling Tank Outlet		1	1	10mg/lit

Water Pollution Control Measures:

1	Mine water is collected in sumps in side quarry and pumped out after settling.
2.	Mine water is filtered and used for washing etc. Part of filtered water is supplied to nearby villages.
3	Excess mine water during monsoon season from the quarry is sent to irrigation tanks of villages by pipe line.
4	Water levels are recorded seasonally in nearby villages and the statement of the same is enclosed here with as Annexure-III

10. Phreatic surface monitoring: (Depth to Water Table)

The phreatic data monitored during the year April, 2022 to September, 2022 is as given below.

A.Observation Wells

Sl. No.	Name of village	Location	Type of Well	Period	Depth to water (m)
					Pre-Monsoon, Monsoon, Post Monsoon & Winter April, 2022 to September, 2022
1	Chelpur	Centre of the village	Domestic	Winter	4.35
				Pre-monsoon	6.32
				Monsoon	3.16
				Post-monsoon	
2	Dharmaraopet	Adj.to B.Ravindar redid house	Domestic	Winter	0.63
				Pre-monsoon	1.37
				Monsoon	1.00
				Post-monsoon	
3	Baswarajupalli	Entrence of the village	Domestic	Winter	6.13
				Pre-monsoon	6.67
				Monsoon	2.00
				Post-monsoon	
4	Gollapalli	Centre of the village	Domestic	Winter	3.51
				Pre-monsoon	5.87
				Monsoon	1.65
				Post-monsoon	
5	Peddapur	Centre of the village	Domestic	Winter	13.27
				Pre-monsoon	14.07
				Monsoon	Dry
				Post-monsoon	
6	Gurrampet	Northern end of the village.	Domestic	Winter	5.27
				Pre-monsoon	Dry
				Monsoon	4.18
				Post-monsoon	
7	Madhavaopalli	Centre of the village	Domestic	Winter	NA
				Pre-monsoon	8.80
				Monsoon	NA
				Post-monsoon	

Water Conservation Measures:

- Mine discharge water is treated in sand filter bed of capacity 2,00,000 gallons which is in the mine premises.
- In this area two STPs of each 3.0 MLD capacity are working and dealing with 1800 KLD sewage water. After treatment sewage water is let out to nearby tank in forest land.

11. Noise Level Monitoring: April, 2022 to September, 2022:

Monitoring Locations

Station Code	Name of the Stations	Latitude	Longitude
CN 7	KTK OC-III Project	N 18°22' 10.1"	E 79° 53' 15.2"
BN 7	Peddapur Village	N 18°22' 59.6"	E 79° 54' 32.1"
BN 8	Basavarajupalli Village	N 18°21' 59.9"	E 79° 52' 57.8"

A. Noise Monitoring Data April, 2022 to September, 2022:

Location	Direction & Distance	Day Time			
		Min.	Max.	Avg.	STD
KTK OC-III Project	Core	38.4	51.1	46.98	75
Peddapur Village	North	35.9	49.3	43.32	55
Basavarajupalli Village	East	37.9	49.4	43.12	55
Location	Direction & Distance	Night Time			
		Min.	Max.	Avg.	STD
KTK OC-III Project	Core	31.9	43.1	38.38	70
Peddapur Village	North	28.3	36.6	32.68	45
Basavarajupalli Village	East	27.6	39.2	34.72	45

Noise Pollution Control Measures:

- i) Plantation is grown around the fan house control noise and also evasee is fitted to the fan house.
- ii) Noise levels were recorded at various locations.
- iii) To dampen the noise levels along the belt conveyor impact rollers are provided at transfer points to reduce the noise.
- iv) High level noise intensity working areas/zones earmuffs or earplugs are provided to the workmen.
- v) Regular noise level monitoring is being done periodically for taking corrective action where ever required.
- vi) Environment awareness campaign measures: Environment awareness week celebrations were conducted in the month of June at all departments and mines in connection with World Environmental day and World environmental protection day and also conducted quiz, elocution & essay writing competitions for the surrounding school children to develop environmental awareness and prizes were issued for the winners.

12. Socio-economic Measures:

- Quarters are constructed on non coal bearing areas with such facilities as Hospitals, Schools, Market place, Post Office, Telegraph Office, Power Supply, Community Halls, Recreation Clubs, Play Grounds and protected water supply and well netted sewage and drainage line systems.
- Free medical treatment to workmen and their families is given and all children of workmen are covered under immunization program me.
- Bore wells are provided in colonies. The drinking water which is supplied to the colony is chlorinated to the prescribed standards.
- Recreation clubs are provided with adequate facilities

- Steps taken to conserve oil and grease: By arresting and minimizing oil and grease leakages.
- Waste materials generated and waste management practices:
- Army recruitment training, tailoring, computer courses impart to the local unemployed.
- Every year plantation program is conducting in the surrounding villages.
- 62 persons have undergone Periodical Medical Examination during this six months period.
- Supply of masks, sanitizers and medical care during Covid Pandemic.

13. Capital and Revenue Expenditure incurred on Environment Management and Pollution Control Measures:

Environment Expenditure during the period April, 2022 to September, 2022

	Capital (in Rs.)	Revenue (in Rs.)
KTK OC-III(UG)	--	1,79,80,768.00
KTK OC-III(OC)	3,41,879.52	--

Prasanna
 Agent
 PROJECT OFFICER
 KTK OC-III Project
 Bhupalpalli Area
 BHUPALPALLI AREA

KH





THE SINGARENI COLLIERIES COMPANY LIMITED
(A Government Company)
KTK OC-III, BHUPALPALLI AREA

HALF YEARLY MONITORING RESULTS OF KTK OC-III PROJECT FOR THE
PERIOD APRIL 2022 TO SEPTEMBER 2022

LIST OF ANNEXURES

S.NO.	Description	Annexure No.
1	Ambient Air Quality data	I
2	Surface Water Quality data	II
3	Effluents Quality data	III
4	Noise Quality data	IV
5	Ground water data	V
6	Ground Water Compliance	VI
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8	Mine Plan	VIII
9	Photos	IX
10	Capital & Expenditure of Mines	X
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KTK OC-III

AIR, WATER & NOISE LOCATION MAP

Air Monitoring Locations

Station Code	Name of the Stations	Latitude	Longitude
CA5	KTK OC-III	N 18°22' 10.1"	E 79° 53' 15.2"
CA9	KKT OCP-III SVEC Camp	N 18°21'17.60"	E 79°54'04.95"
CA10	KKT OCP-III First aid shed	N 18°20'53.20"	E 79°54'44.52"
BA10	Peddapur Village	N 18°22' 59.6"	E 79° 54' 32.1"
BA11	Dharmaraopet Village	N 18°20' 53.1"	E 79° 53' 06.0"
BA18	Basavarajupalli Village	N 18°21' 59.9"	E 79° 52' 57.8"

Water Sampling Locations

Station Code	Name of the Stations	Latitude	Longitude
SW-4	Peddapur village tank	N 18°22' 18.9"	E 79° 54' 32.5"
GW-12	Peddapur village	N 18°22' 26.7"	E 79° 54' 21.1"
GW-13	Parasurampalli village	N 18°21' 40.1"	E 79° 53' 32.4"
GW-14	Basavarajupalli village	N 18°21' 59.9"	E 79° 52' 57.8"
EW8	KTK OC-III project Mine Discharge	N 18°22' 14.5"	E 79° 53' 22.0"
EW10	KTK OC-III Settling Tank Outlet	N 18°22' 6.1"	E 79° 52' 59.7"

Noise Monitoring Locations

Station Code	Name of the Stations	Latitude	Longitude
CN 7	KTK OC-III	N 18°22' 10.1"	E 79° 53' 15.2"
BN 7	Peddapur Village	N 18°22' 59.6"	E 79° 54' 32.1"
BN 8	Basavarajupalli Village	N 18°21' 59.9"	E 79° 52' 57.8"

Annexure – I

1. Project Name : Post Project Environmental Monitoring in SCCL Mining Areas
2. Area : Bhoopalpalli
3. Sampling Location & Code : KTK OC-III
4. Description of the location : Instrument was installed at a height of 5.5 meters on the top of KTK OC-III Shift in charge's office, surrounding to the station the following features were observed:
 - : The site is surrounded by open land area at North and plantation area at South KTK OC-III mine and road connected to Dharmaraopet (V) and Basavarajupalli (V) at west is observed and site mainly lies in core zone area of mine.
5. Sampling Duration : 24 hrs
6. Period of Monitoring : April 2022 to September 2022
7. Nature of the area : Core zone
8. Source of Pollution : Mining activities & vehicular movement also observed.

Ambient Air Quality Results at KTK OC-III (CA5)

April 2022 to September 2022

Sl. No.	Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
Coal mine standards, GSR 742(E), Dated 25.09.2000		250	-	120	120
1.	05.04.2022	137	49.2	11.4	15.9
2.	21.04.2022	139	46.5	9.8	12.2
3.	06.05.2022	169	54.5	13.7	21.9
4.	19.05.2022	162	52.7	9.3	13.5
5.	04.06.2022	130	42.7	9.3	14.1
6.	20.06.2022	97	46.8	9.7	14.9
7.	05.07.2022	82	46.6	9.1	11.5
8.	21.07.2022	84	42.1	7.6	10.5
9.	04.08.2022	114	40.4	11.5	15.4
10.	19.08.2022	129	51.4	12.0	16.0
11.	05.09.2022	106	41.7	9.0	14.6
12.	20.09.2022	134	45.5	7.4	12.6
min		82	40.4	7.4	10.5
max		169	54.5	13.7	21.9
avg		120.70	46.44	9.86	14.50
98 per		167.74	54.18	13.39	20.84

Ambient Air Quality at KTK OC-III SVEC CAMP (CA9)

1. Project Name : Post Project Environmental Monitoring in SCCL Mining Areas
2. Area : Bhupalpalli
3. Sampling Location & Code : KTK OC-III SVEC CAMP (CA9)
4. Description of the location : Instrument was installed at a height of 2.5 meters on the top of power shed and SVEC Camp Dumpers section surrounding to the station the following features were observed.
The site is surrounded by Peddapur Village at North and followed by KTK OCP-III Dump at South, KTK OCP-III Mine is at East is observed and Parsurampalli village is at West is observed .
5. Sampling Duration : 24 hrs
6. Period of Monitoring : April 2022 to September 2022
7. Nature of the area : Core zone
8. Source of Pollution : Mining activities & vehicular movement also observed.

Ambient Air Quality Results at KTK OC-III SVEC CAMP (CA9)
April 2022 to September 2022

S.No.	Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
Coal mine standards, GSR 742(E), Dated 25.09.2000		100	60	80	80
1.	05.04.2022	159	58.2	11.1	18.0
2.	21.04.2022	138	42.5	11.4	14.2
3.	06.05.2022	176	55.9	9.9	14.7
4.	19.05.2022	173	54.3	12.1	15.7
5.	04.06.2022	156	51.7	8.1	11.6
6.	20.06.2022	114	42.5	10.5	15.2
7.	05.07.2022	97	46.6	8.8	11.3
8.	21.07.2022	85	35.5	10.0	13.2
9.	04.08.2022	114	39.7	9.0	13.9
10.	19.08.2022	120	48.7	11.9	14.5
11.	06.09.2022	119	46.5	9.5	14.4
12.	21.09.2022	103	42.6	11.6	14.7
min		85	35.5	8.1	11.3
max		176	55.9	12.1	15.7
avg		129.38	46.86	10.04	13.76
98 per		175.58	55.68	12.07	15.63

Ambient Air Quality at KTK OC-III First Aid shed (CA10)

1. Project Name : Post Project Environmental Monitoring in SCCL Mining Areas
2. Area : Bhupalpalli
3. Sampling Location & Code : KTK OC-III First Aid shed (CA10)
4. Description of the location : Instruments are installed at a height of 3 meters on the top First Aid shed, near KTK OC III Mine Dumpers working. the following features were observed.
The site is surrounded by KTK-III mine at North and followed by KTK OC-III Dump at South. Gurrampeta Village at East And Coal filling and road connectivity of OB Dump is observed at West and site mainly lies in core zone area of mine.
5. Sampling Duration : 24 hrs
6. Period of Monitoring : April 2022 to September 2022
7. Nature of the area : Core zone
8. Source of Pollution : Mining activities & vehicular movement also observed.

**Table 3.2
Ambient Air Quality Results at KTK OC-III First Aid shed (CA10)**

S.No.	Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
Coal mine standards, GSR 742(E), Dated 25.09.2000		100	60	80	80
1.	05.04.2022	172	56.3	9.6	12.7
2.	21.04.2022	174	59.1	10.9	14.4
3.	06.05.2022	179	52.4	9.4	13.9
4.	19.05.2022	192	62.3	9.2	12.2
5.	04.06.2022	132	42.2	9.5	12.2
6.	20.06.2022	102	44.3	11.1	14.4
7.	05.07.2022	110	47.9	9.3	13.6
8.	21.07.2022	94	44.7	8.0	12.3
9.	04.08.2022	131	43.8	9.3	12.7
10.	19.08.2022	137	52.5	9.2	12.9
11.	06.09.2022	125	44.5	9.3	12.8
12.	21.09.2022	112	46.7	9.1	13.4
min		94	42.2	8	12.2
max		192	62.3	11.1	14.4
avg		131.40	48.13	9.34	13.04
98 per		189.66	60.54	10.81	14.31

1. Project Name : Post Project Environmental Monitoring in SCCL Mining Areas
2. Area : Bhoopalpalli
3. Sampling Location & Code : Peddapur Village (BA10)
4. Description of the location : Instrument was installed at a height of 3.5 meters on the top of Sri Arrem Satishkumar's residence, surrounding to the station the following features were observed:
: The site is surrounded by Peddapur (V) at North and East, and West road is connecting to Jangupalli (V). The site mainly lies in buffer zone
5. Sampling Duration : 24 hrs
6. Period of Monitoring : April 2022 to September 2022
7. Nature of the area : Buffer zone
8. Source of Pollution : Vehicular movement

Ambient Air Quality Results at Peddapur Village (BA10)
April 2022 to September 2022

S.No.	Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
NAAQ Standards, CPCB Dated: 18.11.2009		100	60	80	80
13.	05.04.2022	69	34.6	9.5	12.2
14.	21.04.2022	69	38.2	8.5	14.4
15.	06.05.2022	62	35.4	7.3	13.1
16.	19.05.2022	62	32.2	7.6	14.5
17.	04.06.2022	62	34.5	9.1	11.9
18.	20.06.2022	53	29.1	10.6	14.1
19.	05.07.2022	55	29	9.1	11.9
20.	21.07.2022	47	24.8	8.1	12.4
21.	04.08.2022	49	29.2	9.7	11.4
22.	19.08.2022	62	34.0	8.7	13.6
23.	05.09.2022	63	35.6	7.8	13.9
24.	20.09.2022	55	29.2	8.2	11.0
min		47	24.8	7.3	11
max		63	35.6	10.6	14.5
avg		57.00	31.30	8.62	12.78
98 per		62.82	35.56	10.44	14.43

1. Project Name : Post Project Environmental Monitoring in SCCL Mining Areas
2. Area : Bhoopalpalli
3. Sampling Location & Code : Basavarajupalli Village (BA18)
4. Description of the location : Instrument was installed at a height of 3.5 meters on the top of Sri Pulluri Lingarao's residence, surrounding to the station the following features were observed:
: The site is surrounded by agricultural lands in North, East, and West direction are followed by Basavarajupalli (V) is located in North side. The site mainly lies in buffer zone.
5. Sampling Duration : 24 hrs
6. Period of Monitoring : April 2022 to September 2022
7. Nature of the area : Buffer zone
8. Source of Pollution : KTK OC-III project mining operations are at a distance of 1 Km and vehicular movement is observed.

Ambient Air Quality Results at Basavarajupalli Village (BA18)
April 2022 to September 2022

S.No.	Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
NAAQ Standards, CPCB Dated: 18.11.2009		100	60	80	80
1.	05.04.2022	70	37.5	8.3	12.2
2.	21.04.2022	71	35.9	10.1	14.4
3.	06.05.2022	75	39.4	7.2	14.0
4.	19.05.2022	74	38.2	9.2	12.2
5.	03.06.2022	62	33.9	8.5	11.3
6.	18.06.2022	60	33.4	8.8	11.8
7.	05.07.2022	68	39.3	8.0	13.2
8.	21.07.2022	53	29.2	8.0	12.0
9.	04.08.2022	59	33.6	9.7	12.7
10.	19.08.2022	66	39.4	7.6	12.2
11.	05.09.2022	55	32.2	8.2	14.8
12.	20.09.2022	58	29.4	8.7	13.0
min		53	29.2	7.2	11.3
max		75	39.4	9.7	14.8
avg		63.00	34.80	8.39	12.72
98 per		74.82	39.40	9.61	14.66

1. Project Name : Post Project Environmental Monitoring in SCCL Mining Areas
2. Area : Bhoopalpalli
3. Sampling Location & Code : Dharmaraopet Village (BA11)
4. Description of the location : Instrument was installed at a height of 3.8 meters on the top of Kanna Rajanna's residence, surrounding to the station the following features were observed:
: The site is surrounded by Agricultural fields, open place at North and East, and West road is connecting to Dharmaraopet (V). The site mainly lies in buffer zone
5. Sampling Duration : 24 hrs
6. Period of Monitoring : April 2022 to September 2022
7. Nature of the area : Buffer zone
8. Source of Pollution : Vehicular movement is observed

Ambient Air Quality Results at Dharmaraopet Village (BA11)
April 2022 to September 2022

S.No.	Date of Sampling	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)
NAAQ Standards, CPCB Dated: 18.11.2009		100	60	80	80
1.	05.04.2022	70	37.5	9.2	13.0
2.	21.04.2022	72	42.1	7.6	13.7
3.	06.05.2022	77	40.5	7.6	11.5
4.	19.05.2022	67	38.4	8.5	13.3
5.	04.06.2022	60	34.7	9.0	12.6
6.	20.06.2022	54	31.5	9.2	13.6
7.	05.07.2022	58	33.3	8.3	14.1
8.	21.07.2022	46	26.6	9.2	12.9
9.	04.08.2022	52	27.7	10.2	13.6
10.	19.08.2022	57	29.8	8.7	12.2
11.	05.09.2022	49	25.6	8.7	12.0
12.	20.09.2022	43	26.7	9.0	12.9
min		43	25.6	7.6	11.5
max		77	40.5	10.2	14.1
avg		56.30	31.48	8.84	12.87
98 per		75.20	40.12	10.02	14.01

4.0 WATER QUALITY

4.1 Selection of Sampling Locations

A total of 4 water samples i.e., 1 sample from surface and 3 samples from groundwater were collected and analyzed for various physico-chemical and bacteriological parameters.

Table 4.1 Surface Water Sampling Locations

Sl. No.	Sampling code	Date of sampling		Sampling Location	Latitude	Longitude
		1 st quarter	2 nd quarter			
1.	SW-4	31.05.2022	04.08.2022	Peddapur village tank	N 18°22' 18.9"	E 79° 54' 32.5"

Table 4.2 Groundwater Sampling Locations

Sl. No.	Sampling code	Date of sampling		Sampling Location	Latitude	Longitude
		1 st quarter	2 nd quarter			
1.	GW-12	31.05.2022	03.08.2022	Peddapur village	N 18°22' 26.7"	E 79° 54' 21.1"
2.	GW-13	31.05.2022	04.08.2022	Parasurampalli village	N 18°21' 40.1"	E 79° 53' 32.4"
3.	GW-14	31.05.2022	04.08.2022	Basavarajupalli village	N 18°21' 59.9"	E 79° 52' 57.8"

Table 4.3 Physico-Chemical and Bacteriological Characteristics of Surface Water

Table 4.3.1 Physico-Chemical and Bacteriological Characteristics of Surface Water as per CPCB Water Quality Criteria

S.No.	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT	
				Class A	Class B	Class C	Class D	Class E	SW-4 (Peddapur village tank)	
									1 st Quarter	2 nd Quarter
1	pH	-	4500-H+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	7.3	7.7
2	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	2250 µmhos/cm	564	220
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	6.0	5.2
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	2.8	3.5
5	Total Coliforms	MPN/100mL	9221 B	50 or less	500 or less	5000 or less	-	-	220	280
6	Free Ammonia (as N)	mg/L	4500-NH ₃ -F	-	-	-	1.2 mg/L or less	-	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.25	0.16
8	SAR	-	-	-	-	-	-	Less than 26	1.33	0.60

Table 4.3.2 Physico-Chemical Characteristics of Surface Water at Selected Locations in the Study Area

S. No	Parameters	Unit	Test Method	SW-4 (Peddapur village tank)	
				1 st Quarter	2 nd Quarter
1.	Colour	Pt-co	2120. B	5	10
2.	Odour	TON	2150. B	No odour observed	No odour observed
3.	Temperature	°C	2550. B	25.8	25.3
4.	Total Dissolved Solids at 180° C	mg/L	2540.C	334	126
5.	Total Suspended Solids at 105° C	mg/L	2540. D	21	27
6.	Chemical Oxygen Demand	mg/L	5220. D	18	14
7.	Chlorides as Cl ⁻	mg/L	4500-Cl ⁻ .B	113	15
8.	Sulphates as SO ₄ ²⁻	mg/L	4500-SO ₄ ²⁻ .E	48	15
9.	Fluoride as F ⁻	mg/L	4500-F ⁻ .C	0.33	0.18
10.	Calcium as Ca	mg/L	3500-Ca.B	27	20
11.	Magnesium as Mg	mg/L	3500-Mg.B	21	6
12.	Sodium as Na	mg/L	3500-Na.B	38	12
13.	Potassium as K	mg/L	3500-K.B	1.1	1.05
14.	Nitrites as NO ₂	mg/L	4500-NO ₂ ⁻ .B	BDL	BDL
15.	Nitrates as NO ₃	mg/L	4500-NO ₃ ⁻ .B	22	1.8
16.	Total Phosphates	mg/L	4500-P-D	BDL	BDL
17.	Ammonical Nitrogen as NH ₃ -N	mg/L	4500-NH ₃ -C	BDL	BDL
18.	Oil & Grease	mg/L	5520. B	<1	<1
19.	Fecal Coliform	MPN/100mL	9221 E	11	23
20.	Zinc as Zn	mg/L	3120. B	0.31	0.08
21.	Iron as Fe	mg/L	3120. B	0.73	0.26
22.	Arsenic as As	mg/L	3120. B	BDL	BDL
23.	Lead as Pb	mg/L	3120. B	BDL	BDL
24.	Cadmium as Cd	mg/L	3120. B	BDL	BDL

S. No	Parameters	Unit	Test Method	SW-4 (Peddapur village tank)	
				1 st Quarter	2 nd Quarter
25.	Total Chromium as Cr	mg/L	3120. B	BDL	BDL
26.	Nickel as Ni	mg/L	3120. B	BDL	BDL
27.	Copper as Cu	mg/L	3120-B	BDL	BDL
28.	Selenium as Se	mg/L	3120-B	BDL	BDL

Table 4.4 Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area

Table 4.4.1 Organoleptic and Physical Parameters

Sl. No.	Parameters	Unit	Test Method	IS: 10500:2012 Requirement (Acceptable Limit)	IS: 10500:2012 Permissible Limit in the absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st quarter	2 nd quarter	1 st quarter	2 nd quarter	1 st quarter	2 nd quarter
1.	Colour	Pt-co-	2120. B	5	15	<5	<5	<5	5	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.	Agree.	Agree.
3.	pH	-	4500-H+B	6.5 to 8.5	No relaxation	7.1	8.2	7.5	8.4	7.7	8.0
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.4	0.29	0.48	0.26	0.36	0.39
6.	Total Dissolved Solids at 180° C	mg/L	2540.C	500	2000	694	508	502	780	910	1110

Table 4.3.2 General Parameters Concerning Substances Undesirable in Excessive Amounts

Sl. No.	Parameters	Unit	Test Method	IS: 10500:2012 Requirement (Acceptable Limit)	IS: 10500:2012 Permissible Limit in absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st quarter	2 nd quarter	1 st quarter	2 nd quarter	1 st quarter	2 nd quarter
1	Calcium as Ca	mg/L	3500-Ca.B	75	200	82	44	44	40	94	70
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	64	34	32	27	68	49
3.	Chlorides as Cl ⁻	mg/L	4500-Cl.B	250	1000	71	85	64	245	154	258
4.	Sulphates as SO ₄ ²⁻	mg/L	4500-SO ₄ ²⁻ .E	200	400	96	86	74	94	84	130
5.	Fluoride as F ⁻	mg/L	4500-F.C	1.0	1.5	0.82	0.78	0.62	0.85	0.74	0.93
6.	Nitrates as NO ₃	mg/L	4500-NO ₃ .B	45	No relaxation	37	39	42	48	44	53
7.	Residual free chlorine	mg/L	4500-Cl.B	0.2	1.0	BDL	BDL	BDL	BDL	BDL	BDL
8.	Phenolic compounds as C ₆ H ₅ OH	mg/L	5530-D	0.001	0.002	BDL	BDL	BDL	BDL	BDL	BDL
9.	Total Alkalinity as CaCO ₃	mg/L	2320. B	200	600	205	200	210	200	435	450
10.	Total Hardness as CaCO ₃	mg/L	2340. C	200	600	469	250	242	210	515	375
11.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.09	0.05	0.09	0.04	0.06	0.06
12.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.19	0.26	0.26	0.38	0.19	0.19
13.	Boron as B	mg/L	3120-B	0.5	2.4	0.24	0.31	0.2	0.24	0.27	0.14
14.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.47	0.51	0.45	0.52	0.59	0.38
15.	Zinc as Zn	mg/L	3120-B	5	15	0.16	0.11	0.18	0.23	0.24	0.18
16.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL	BDL	BDL	BDL	BDL
17.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL	BDL	BDL	BDL	BDL
18.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
19.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL

Table 4.3.3 Parameters Concerning Toxic Substances

S. No	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
2	Cyanide as CN-	mg/L	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
3	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
4	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
5	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
6	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL	BDL	BDL	BDL	BDL
7	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
8	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	BDL	BDL	BDL	BDL	BDL
9	Pesticides: α-BHC, β-BHC, γ-BHC, δ-BHC, o, p-DDT, p, p'-DDT, Endosulfan, β- Endosulfan, Aldrin, Dieldrin	µg/L	6630. D	Absent	0.001	ND	ND	ND	ND	ND	ND
	2,4-D, Carbaryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND	ND	ND	ND
10	Polyaromatic Hydrocarbons (PAH's): Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	--	--	ND	ND	ND	ND	ND	ND

Table 4.3.4 Bacteriological Quality of Drinking Water

Sl. No.	Parameters	Unit	Test Method	IS: 10500:2012 Requirement (Acceptable Limit)	IS: 10500:2012 Permissible Limit in absence of alternate source	RESULT					
						GW-12 (Peddapur Village)		GW-13 (Parasurampalli Village)		GW-14 (Basavarajupalli Village)	
						1 st quarter	2 nd quarter	1 st quarter	2 nd quarter	1 st quarter	2 nd quarter
1.	Total Coliforms	MPN/100 mL	9221B	-	-	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
2.	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8

4.2 Summary of Water Quality

4.2.1 Surface Water Quality

Comparison with CPCB Water Quality Criteria

The major findings are as follows: pH values were found to be in the range 7.3 & 7.7 in SW-4 sample. Total coliforms and fecal coliforms were present in the surface water sample collected in the study area. Presence of total coliforms, fecal coliforms shows contamination from fecal matter or sewage entry and not suitable for direct drinking purpose and needs chlorination before treatment.

In accordance with CPCB water quality criteria, parameters studied were pH, DO, BOD and total coliforms. It may be observed that the surface water sample has DO values 6.0 & 5.2mg/L and BOD was found to be 2.8 & 3.5 mg/L in given sample. Total coliforms are recorded as 220 & 280 MPN/100ml and fecal coliforms are recorded as 11 & 23 MPN/100ml in the given sample.

The given sample fall under the CPCB water quality criteria Class-B (Outdoor bathing (Organized) as the DO is satisfactory, BOD is within the limit and Total coliforms are less than 500 MPN/100 ml. BOD is slightly high and this may be due to some natural organic matter like leaves and mud and can be useful once filtered.

In addition to the CPCB criteria parameters, another 28 parameters were also investigated and there is no abnormality observed in the given sample.

4.2.2 Groundwater Quality

The analysis reports show pH values range 7.1 & 8.4 in GW-12, 13, 14 samples collected within the study area. Some water samples are exceeding the acceptable limits of IS: 10500:2012 but within the permissible limits. Because of underground strata, the parameters might have exceeded.

TDS concentrations are in the range 502 – 1110, are observed to be above the acceptable limit of 500mg/L but within the permissible limit of 2000mg/L at all locations. Calcium concentrations are above the acceptable limit of 75mg/L but within the permissible limit of 200mg/L at GW-12, 14 (82, 94mg/L, 1st quarter), and within the acceptable limit at other quarters. Magnesium concentrations are above the acceptable limit of 30mg/L but within the permissible limit of 100mg/L at all quarters except GW-13 (27mg/L, 2nd quarter) is within the acceptable limit.

Nitrates concentrations are above the permissible limit of 45mg/L at Parasurampalli GW-13 (48mg/L, 2nd quarter) Basavarajupalli GW-14 (53mg/L, 2nd quarter) and within the limit in other quarters. Chlorides concentrations are above the acceptable limit of 250mg/L but within the permissible limit of 1000mg/L at GW-14 (258mg/L, 2nd quarter) and within the acceptable limit in other quarters. Fluorides, Sulphates, Iron concentrations were within the acceptable limits at all the locations.

The total alkalinity concentrations are in the range 200 - 450mg/L and Total hardness concentrations are in the range 210 - 515mg/L. Samples collected are above the acceptable limit of 200mg/L but within the permissible limit of 600mg/L at all locations GW-12, 13, 14.

Groundwater quality at Peddapur village (GW-12):

In this location, all the parameters are well within the limits. So, the groundwater may be used for drinking purpose in the absence of any alternative drinking water source as few parameters exceeded the acceptable limits; however, they are well within in the permissible limits. Groundwater at this location possesses temporary hardness due to the presence of bicarbonates of calcium and magnesium which can be removed by boiling water.

Groundwater quality at Parasurampalli village (GW-13) & Basavarajupalli village (GW-14):

In these locations, only Nitrates have exceeded the limit in 2nd quarter. Excess nitrate concentrations may be due to the fertilizers runoff from the agricultural areas, as well as the untreated disposal of domestic and industrial wastewater into the environments. Whenever these concentrations exceed the permissible limit, by deploying reverse Osmosis, electro dialysis Distillation, Ion-Exchange procedures and Solar Still, they may be removed.

The graphical presentation for Nitrates exceeding the limits is shown in Fig 4.1.

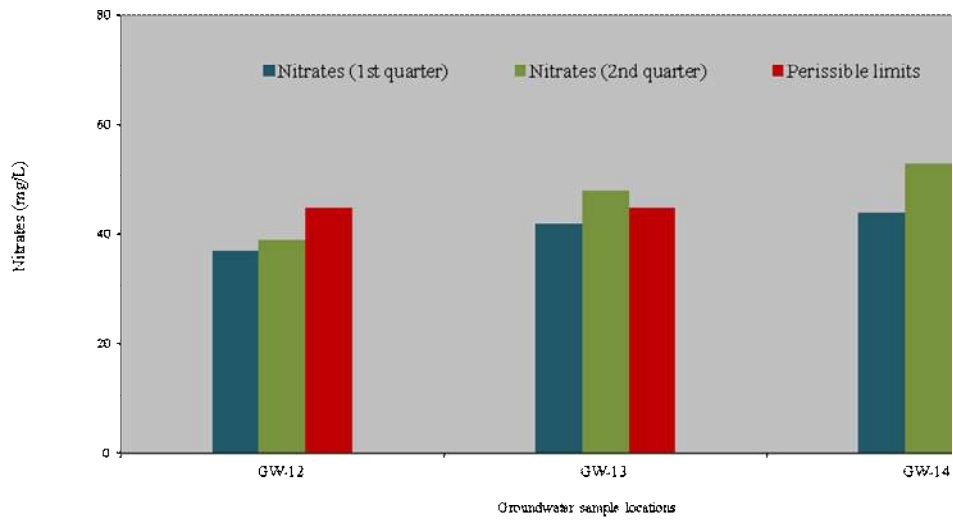


Fig 4.1 Graphical presentation of Nitrates Concentrations

- (1) Project Name : Post Project Environmental Monitoring in SCCL Mining areas
- (2) Area : Bhoopalpalli
- (3) Sampling Location & Code : KTK OC-III Mine Discharge (EW8)
- (4) Nature of the Component : Effluents
- (5) Period of Monitoring : April 2022 to September 2022

Effluents Quality Data
Characteristics of Effluents – KTK OC-III Mine discharge (EW8)

Sampling Period: April 2022 to September 2022

S.No.	Date of Sampling	pH	TSS at 105°C	TDS at 180°C	COD	BOD	Oil & Grease
	Unit	--	mg/L	mg/L	mg/L	mg/l	mg/L
	Test Method	4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025	5520-B
	MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines	5.5 to 9.0	100	--	250	30	10
1	11.04.2022	7.9	46	911	39	8.4	1.4
2	18.04.2022	8.1	32	890	36	6.2	1.2
3	11.05.2022	7.4	39	966	28	3.6	1.2
4	23.05.2022	7.9	43	791	20	3.1	1.4
5	08.06.2022	7.8	24	887	30	4.6	1.2
6	25.06.2022	7.8	32	925	34	4.6	1.4
7	08.07.2022	7.4	41	1015	23	3.0	<1
8	22.07.2022	7.7	32	966	19	2.4	1.6
9	08.08.2022	7.5	49	890	11	2.2	<1
10	24.08.2022	7.9	41	915	31	3.5	1.4
11	09.09.2022	7.8	36	1012	27	2.6	<1
12	23.09.2022	7.7	39	985	31	3.5	<1
	min	7.4	24	791	11	2.2	1.2
	max	7.9	49	1015	34	4.6	1.2
	avg	7.69	37.60	935.20	25.40	3.31	1.2
	98 per	7.90	47.92	1014.46	33.46	4.60	1.2

- (1) Project Name : Post Project Environmental Monitoring in SCCL Mining areas
- (2) Area : Bhoopalpalli
- (3) Sampling Location & Code : KTK OC-III Settling Tank Outlet (EW10)
- (4) Nature of the Component : Effluents
- (5) Period of Monitoring : April 2022 to September 2022

Effluents Quality Data
Characteristics of Effluents – KTK OC-III Settling Tank Outlet (EW10)

Sampling Period: April 2022 to September 2022

S.No.	Date of Sampling	pH	TSS at 105 ^o C	TDS at 180 ^o C	COD	BOD	Oil & Grease
	Unit	--	mg/L	mg/L	mg/L	mg/l	mg/L
	Test Method	4500-H ⁺ B	2540-D	2540-C	5220-D	IS 3025	5520-B
	MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines	5.5 to 9.0	100	--	250	30	10
1	11.04.2022	7.2	61	926	27	3.2	<1
2	18.04.2022	8.2	40	864	40	9.4	1.2
3	11.05.2022	8.1	58	981	36	3.4	<1
4	23.05.2022	7.8	63	886	32	3.6	1.8
5	08.06.2022	8.1	44	796	34	6.1	1
6	25.06.2022	7.9	24	889	31	4.6	1.2
7	08.07.2022	7.7	58	1138	27	9.1	<1
8	22.07.2022	8.2	34	981	49	4.4	<1
9	08.08.2022	7.8	41	911	31	3.1	<1
10	24.08.2022	7.6	33	738	23	2.4	1
11							
12							
	min	7.6	24	738	23	2.4	1
	max	8.2	63	1138	49	9.1	1
	avg	7.90	44.38	915.00	32.88	4.59	1
	98 per	8.19	62.30	1116.02	47.18	8.68	1

AMBIENT NOISE LEVELS

Noise Quality Monitoring

Noise Monitoring Locations

Station Code	Name of the Stations	Latitude	Longitude
Core Zone			
CN 7	KTK OC-III	N 18°22' 10.1"	E 79° 53' 15.2"
Buffer Zone			
BN 7	Peddapur Village	N 18°22' 59.6"	E 79° 54' 32.1"
BN 8	Basavarajupalli Village	N 18°21' 59.9"	E 79° 52' 57.8"

Summary of Noise Quality of KTK OC-III during April 2022 to September 2022

Summary of ambient Noise Levels data generated at 3 locations during the period from April 2022 to September 2022 of this mine area are presented in Table 6.1. Out of 3 locations, 1 location is in core zone & 2 locations are in buffer zone. The details of Leq (day) and Leq (night) are presented in Table 6.2 to 6.4. From the quarterly data it is observed that the noise levels were well within the stipulated standards.

Noise Quality Data- KTK OC-III (CN7)

Monitoring Period: From April 2022 to September 2022

Name of the Location	Date of Sampling	Noise levels in dB (A)	
		Leq Day	Leq Night
KTK OC-III (CN7)	01.04.2022	56.1	42.1
	18.04.2022	52.3	42.3
	02.05.2022	50.5	37.2
	16.05.2022	51.0	43.1
	05.06.2022	51.1	41.8
	22.06.2022	50.5	37.2
	06.07.2022	40.2	34.5
	22.07.2022	44.6	37.1
	05.08.2022	38.4	31.9
	20.08.2022	43.7	38.0
	06.09.2022	50.4	42.9
	21.09.2022	49.4	40.1
	min	38.4	31.9
	max	51.1	43.1
avg	46.98	38.38	
98 per	51.08	43.06	
GSR 742 (E) Standards		75	70

Noise Quality Data- Peddapur Village (BN 7)
Monitoring Period: From April 2022 to September 2022

Name of the Location	Date of Sampling	Noise levels in dB (A)	
		Leq Day	Leq Night
Peddapur Village (BN 7)	06.04.2022	45.6	39.4
	22.04.2022	43.1	32.5
	07.05.2022	46.0	34.7
	20.05.2022	40.2	31.6
	03.06.2022	49.3	31.9
	18.06.2022	46.6	33.9
	06.07.2022	45.6	34.9
	22.07.2022	35.9	28.3
	05.08.2022	38.9	28.4
	20.08.2022	47.6	36.2
	06.09.2022	40.3	30.3
	21.09.2022	42.8	36.6
	min	35.9	28.3
	max	49.3	36.6
	avg	43.32	32.68
98 per	48.99	36.53	
GSR 742 (E) Standards		55	45

Noise Quality Data- Basavarajupalli Village(BN 8)
Monitoring Period: From April 2022 to September 2022

Name of the Location	Date of Sampling	Noise levels in dB (A)	
		Leq Day	Leq Night
Basavarajupalli Village(BN 8)	06.04.2022	45.5	29.3
	22.04.2022	47.1	37.6
	07.05.2022	48.1	38.5
	20.05.2022	41.1	32.5
	04.06.2022	41.6	37.1
	20.06.2022	49.4	39.2
	06.07.2022	46.9	38.4
	22.07.2022	39.4	31.6
	05.08.2022	37.9	27.6
	20.08.2022	40.2	34.7
	06.09.2022	43.6	35.0
	21.09.2022	43.0	32.6
	min	37.9	27.6
	max	49.4	39.2
	avg	43.12	34.72
98 per	49.17	39.07	
GSR 742 (E) Standards		55	45

**ATTITUDE OF PHREATIC SURFACE IN GODAVARI VALLEY COALFIELD
BHUPALPALLI AREA**

ATTITUDE OF PHREATIC SURFACE IN GODAVARI VALLEY COALFIELD BHUPALPALLI AREA														
Area : BHPL														
Well.No	Name of village	Location	Owners' name	Type of well	Dimensions (m)	Total depth (m)	Geology	Measuring point (m)	Depth to water (m)				Nearest mine & dist. (km)	
									Period	2019	2020	2021		2022
1	Bhupalapalli	KTK-2A inc., 18°26'39.58", 79°51'11.65"	Teli Raghavulu	Domestic	2.00	12.00	Barakar Fm.	0.40	Winter	2.96	9.28	11.57	8.30	KTK2&2A(0.40)
									Pre-monsoon	8.18	10.63	8.05	8.47	
									Monsoon	2.34	1.22	3.74	2.80	
									Post-monsoon	3.15	5.00	4.72		
2	Phakeergadda	Behind Vivekananda school, 18°26'43.07", 79°50'48.57"	Govt. well	Domestic	2.00	13.00	Barakar Fm.	0.50	Winter	2.15	2.00	3.67	3.80	KTK2&2A (1.0)5&5A(1.8)
									Pre-monsoon	3.83	2.11	4.30	4.42	
									Monsoon	0.85	0.90	1.20	1.80	
									Post-monsoon	0.87	0.88	1.79		
3	Jangedu	Gram Panchayat Office, 18°26'43.17", 79°50'31.87"	Bommandeni Prasad	Domestic	1.50	11.10	Barakar Fm.	0.50	Winter	4.24	3.27	4.17	4.65	KTK- 2&2A(1.5), 3&3A(2.0)
									Pre-monsoon	6.48	5.24	5.90	5.42	
									Monsoon	1.68	1.52	2.33	1.93	
									Post-monsoon	1.93	2.00	2.34		
4	Seggampalli	Road side, 18°27'02.28", 79°50'15.75"	Gajja Bannaiah	Domestic	6.00	9.50	Barakar Fm.	0.50	Winter	4.42	5.10	5.47	7.49	KTK-1,1A(1.8) 2&2A(2.0)
									Pre-monsoon	7.78	6.34	6.20	8.97	
									Monsoon	2.29	3.25	1.57	1.93	
									Post-monsoon	4.30	3.03	4.97		
5	Seggampalli	Centre of village, 18°27'00.55", 79°50'22.07"	Govt. well	Domestic	2.00	7.25	Barakar Fm.	0.35	Winter	6.85	7.75	4.53	6.09	KTK-1&1A(1.7) 2&2A(1.6)
									Pre-monsoon	6.90	7.10	6.10	6.07	
									Monsoon	4.79	1.57	5.75	WD	

									Post- monsoon	4.30	2.00	4.75		
6	Gaddiganipalli	Western side of village, 18°27'23.52", 79°50'39.36"	Jadi Dammaidah	Domestic	1.50	9.00	Barakar Fm.	0.50	Winter	8.15	6.80	7.74	6.36	KTK-1,1A(1.00) 2&2A(1.5)
									Pre- monsoon	7.20	7.12	8.00	6.82	
									Monsoon	6.32	2.45	6.37	4.95	
									Post- monsoon	6.73	6.49	6.17		
7	Kasimpalli	Eastern end of village 18°27'19.11", 79°49'43.38"	Akula Rajaiah	Domestic	3.50	12.00	Barakar Fm.	0.40	Winter	7.87	9.18	9.09	8.64	KTK-1&1A(1.40), 2&2A(2.5),
									Pre- monsoon	11.06	10.36	9.15	11.73	
									Monsoon	2.67	1.67	4.35	4.60	
									Post- monsoon	7.06	7.02	10.21		
8	Beddalapalli	Centre of village, 18°27'50.26", 79°50'06.09"	Beddala MahaKali	Agri. well	4.00	9/8.00	Barakar Fm.	0.40	Winter	2.75	3.00	3.22	2.37	KTK-1&1A(1.0), 2&2A(3.0)
									Pre- monsoon	2.94	5.79	3.30	2.67	
									Monsoon	4.79	0.67	2.85	1.95	
									Post- monsoon	1.43	1.86	3.27		
9	Kompalli	Western side of village, 18°23'55.83", 79°49'24.24"	Vyanala Mallaiah /Vangallaiah	Domestic	1.50	14.00	Talchir Fm.	0.45	Winter	6.50	2.23	3.07	3.81	KTK-5&5A(5.0)
									Pre- monsoon	9.40	4.79	3.82	7.47	
									Monsoon	1.30	1.24	1.00	3.75	
									Post- monsoon	1.48	1.52	2.02		
10	Chelpur	Centre of village 18°21'49.64", 79°51'14.10"	B.Kamalakarao	Domestic	1.30	12.00	Talchir Fm.	0.36	Winter	6.52	4.14	3.84	4.35	KTK-8&8A(3.7)
									Pre- monsoon	10.53	7.47	5.61	6.32	
									Monsoon	1.3	0.87	0.90	3.16	
									Post- monsoon	1.52	1.84	1.75		
11	Dharmaraopet	C/o B.Ravinder Reddy	Govt. well	Domestic	1.50	12.50	Talchir Fm.	0.10	Winter	0.40	0.38	1.27	0.63	KTK-8&8A(3.0)
									Pre- monsoon	5.33	1.33	1.30	1.37	

		18°20'30.41", 79°53'03.65"							Monsoon	0.21	0.87	0.60	1.00	
									Post-monsoon	0.30	0.38	0.79		
12	Basavarajupalli	Kummari wada 18°21'35.61", 79°53'05.36"	Thallapally Veeraswamy	Ag. Well	5.00	9.00	Talchir Fm.	GL	Winter	7.4	3.61	2.91	6.13	KTK-8&8A(1.1)
									Pre-monsoon	8.3	7.16	5.10	6.67	
									Monsoon	2.84	0.74	0.60	2.00	
									Post-monsoon	2.26	2.03	2.12		
13	Gollapalli	Centre of village, 18°22'07.16", 79°52'15.31"	Gugulotu Monianaik	Domestic	1.20	10.50	Talchir Fm.	0.50	Winter	5.28	3.89	4.91	3.51	KTK-8&8A(2.0)
									Pre-monsoon	7.95	8.97	4.26	5.87	
									Monsoon	1.15	0.50	1.33	1.65	
									Post-monsoon	1.41	1.96	2.19		
14	Ravinagararam	Road side, 18°22'41.62", 79°53'12.83"	Jaggaiiah	Domestic	1.00	9.00	Barren Measure Fm.	G.L	Winter	2.15	1.22	AB	--	KTK-8&8A(1.0)
									Pre-monsoon	3.60	WD		--	
									Monsoon	1.00	AB		--	
									Post-monsoon	1.47				
15	Peddapur	Centre of village, 18°22'43.92", 79°54'25.63"	Som Narasai ah	Domestic	1.50	13.00	Kamthi Fm.	0.60	Winter	DRY	12.46	Dry	13.27	KTK-8&8A(2.0)
									Pre-monsoon	DRY	DRY	Dry	14.07	
									Monsoon	12.92	9.97	WD	Dry	
									Post-monsoon	10.10	Dry	10.16		
16	Bhavasingapalli	Road to Perkapalli, 18°22'45.90", 79°54'58.60"	A.Santhosh	Ag. Well	5.00	10/6.00	Kamthi Fm.	G.L	Winter	3.05	2.50	2.42	3.07	KTK-8&8A(1.0)
									Pre-monsoon	6.85	6.97	5.90	WD	
									Monsoon	2.21	0.63	2.82	WD	
									Post-monsoon	1.70	1.61	2.83		
17	Gurrampet	Northern end	Govt.	Dom	1.70	9.50	Kamthi	0.40	Winter	9.60	4.05	6.74	5.27	KTK-8&8A(3.0)

		of village, 18°21'38.50", 79°55'50.24"	well	estic			i Fm.		Pre- monsoon	DRY	9.91	10.20	Dry		
									Monsoon	5.00	0.37	2.65	4.18		
									Post- monsoon	1.87	1.52	2.83			
18	Madhavrao palli	Centre of village, 18°21'25.30", 79°55'28.32"	Govt. well	Dom estic	2.00	13.00	Barak ar Fm.	0.35	Winter	8.05	7.35	6.47	NA	KTK-8&8A(3.5)	
									Pre- monsoon	8.92	8.55	8.52	8.80		
									Monsoon	5.10	NA	NA	NA		
									Post- monsoon	5.85	NA	5.44			
19	Mallayapalli	Road side, 18°21'38.70", 79°57'02.75"	Gujla Sampat Rao	Dom estic	2.50	10.50	Barren Measu re Fm.	0.40	Winter	7.67	WD	--	--	KTK-8&8A(6.0)	
									Pre- monsoon	DRY	AB	--	--		
									Monsoon	0.80	--	--	--		
									Post- monsoon	0.60	--	--			
20	Venkateswa ra palli	Road side, 18°21'26.34", 79°57'44.61"	Govt. well	Dom estic	2.10	10.00	Barren Measu re Fm.	0.40	Winter	7.90	2.35	1.76	1.50	KTK-8&8A(7.50)	
									Pre- monsoon	DRY	4.13	3.20	5.87		
									Monsoon	2.80	4.13	0.50	2.18		
									Post- monsoon	1.65	GL	0.52			
22	Ramaraopall i/Adavi Rangapur	Centre of village, 18°20'57.23", 79°57'58.88"	Govt. well	Dom estic	2.00	12.50	Barren Measu re Fm.	0.40	Winter	9.95	6.40	6.37	6.40	KTK-8&8A(8.0)	
									Pre- monsoon	11.13	11.19	6.46	9.17		
									Monsoon	2.70	0.52	4.15	5.80		
									Post- monsoon	2.35	2.80	2.21			
23	Thimmapur	Road side, 18°19'44.36", 79°58'42.53"	Govt. well	Dom estic	2.00	9.00	Barren Measu re Fm.	0.40	Winter	1.58	1.90	1.53	3.37	KTK-8&8A(10.0)	
									Pre- monsoon	2.65	1.27	1.97	4.47		
									Monsoon	0.63	0.47	4.15	3.98		
									Post- monsoon	0.90	1.00	3.24			

24	Burgapeta	Centre of village, 18°19'24.77", 79°58'37.46"	Venkateshwar Rao	Domestic	3.00	12.00	Kamthi Fm.	GL	Winter	11.15	8.20	8.75	6.97	KTK-8&8A(10.0)
									Pre-monsoon	DRY	DRY	10.21	10.57	
									Monsoon	7.55	3.70	5.30	6.18	
									Post-monsoon	6.05	4.82	5.28		
25	Anandapuram	Eastern end of village, 18°19'19.04", 79°57'54.37"	Tummalakshmareddy	Domestic	3.00	9.05	Kamthi Fm.	0.50	Winter	6.50	5.02	6.27	4.42	KTK-8&8A(9.5)
									Pre-monsoon	6.58	5.70	5.36	5.87	
									Monsoon	1.57	0.65	1.85	2.15	
									Post-monsoon	3.44	3.00	3.57		
26	Potwarpalli	Western side of village, 18°18'33.91", 79°58'38.99"	Kondam sathreddy	Agri. well	6.85	12.00	Kamthi Fm.	GL	Winter	5.35	2.82	3.67	4.50	KTK-8&8A(11.0)
									Pre-monsoon	5.94	6.91	6.38	7.85	
									Monsoon	3.15	0.61	2.45	3.25	
									Post-monsoon	2.71	2.12	2.48		
27	Laxmidivpet	Rajeshwarrao palli colony, 18°17'45.20", 79°57'37.19"	Govt. well	Domestic	2.00	9.00	Talchir Fm.	0.30	Winter	1.90	2.28	1.67	1.24	KTK-8&8A(11.0)
									Pre-monsoon	2.89	2.43	1.70	1.77	
									Monsoon	1.13	0.76	0.90	1.15	
									Post-monsoon	1.03	NR	1.25		
28	Nallagunta	End of village 18°16'25.54", 79°58'40.34"	Kanthala Tirupathi	Domestic	2.00	11.50	Talchir Fm.	0.50	Winter	6.75	5.21	4.17	3.15	KTK-8&8A(13.0)
									Pre-monsoon	4.35	4.85	4.38	6.13	
									Monsoon	2.9	0.61	0.80	1.86	
									Post-monsoon	1.37	1.18	1.27		
29	Yellareddipalli	Road side, 18°15'43.54", 79°59'03.11"	Valaboju Satyanarayana	Domestic	1.50	8.80	Talchir Fm.	0.30	Winter	6.78	2.22	4.48	2.00	KTK-8&8A(11.5)
									Pre-monsoon	4.60	5.43	5.00	5.08	
									Monsoon	4.44	0.72	1.55	3.20	

									Post- monsoon	1.47	0.61	2.04		
30	Venkatapur	Centre of village, 18°14'41.96", 79°59'50.49"	Govt. well	Dom estic	2.00	11.10	Sullav ai Fm.	0.50	Winter	5.90	2.82	3.72	2.63	KTK-8&8A(17.0)
									Pre- monsoon	10.23	9.27	3.83	7.07	
									Monsoon	1.17	0.67	1.10	1.95	
									Post- monsoon	1.12	1.00	1.39		
31	Yencherla	Centre of vilage 18°12'59.35", 79°58'58.84"	Vemula Raghav Reddy	Dom estic	5.00	12.50	Pakha I Fm.	0.85	Winter	2.45	2.00	1.82	1.29	KTK-8&8A(19.0)
									Pre- monsoon	3.29	2.45	1.90	2.27	
									Monsoon	1.10	0.77	1.00	1.45	
									Post- monsoon	0.98	0.68	1.27		
32	Palampet	Road side 18°16'02.22", 79°56'26.22"	Bandi Sammai ah	Dom estic	1.20	10.00	Sullav ai Fm.	0.60	Winter	5.36	3.1	2.87	3.02	KTK-8&8A(12.0)
									Pre- monsoon	6.58	6.73	4.43	5.71	
									Monsoon	3.58	0.68	1.40	4.80	
									Post- monsoon	1.82	2.23	1.34		
33	Ramanujapu r	Centre of village, 18°17'04.59", 79°55'11.43"	Govt. well	Dom estic	2.00	15.00	Sullav ai Fm.	0.40	Winter	DRY	8.65	5.60	4.30	KTK-8&8A(9.0)
									Pre- monsoon	DRY	8.53	5.63	7.11	
									Monsoon	NA	0.52	3.10	4.35	
									Post- monsoon	Dry	2.00	3.87		
35	Lakshmare dy palli	Road side, 18°20'43.52", 79°49'42.38"	Gudipati Chandr areddy	Dom estic	1.00	10.5/7 .50	Sullav ai Fm.	0.10	Winter	2.93	1.60	2.87	2.77	KTK-8&8A(6.5)
									Pre- monsoon	6.96	3.70	2.99	6.22	
									Monsoon	0.90	0.64	0.70	2.45	
									Post- monsoon	0.83	0.77	0.90		
36	Moranchapa lli	Northern end of village, 18°21'13.43",	Sangu Sateesh reddy	Dom estic	4.00	8.00	Sullav ai Fm.	0.30	Winter	5.15	2.41	2.27	2.41	KTK-8&8A(6.5)
									Pre- monsoon	5.30	2.95	1.45	3.19	

		79°49'44.49"							Monsoon	1.96	0.55	0.65	2.15	
									Post-monsoon	1.20	2.00	1.25		
37	Sitarampuram	End of the village, 18°19'24.013", 79°55'25.618"	Gottemukkula Sudakarreddy	Ag. Well	10.45	11.00		GL	Winter	DRY	6.52	6.62	7.77	
									Pre-monsoon	DRY	DRY	8.02	9.80	
									Monsoon	6.88	1.57	2.10	4.18	
									Post-monsoon	2.85	3.10	3.54		
38	Appayyapalli	Near Pochamma temple 18°19'20.90", 79°54'52.33"	Pidichetti Rajamogili	Domestic	1.25	9.25		0.65	Winter	8.15	NA	2.13	2.77	
									Pre-monsoon	DRY	2.74	3.65	3.97	
									Monsoon	1.82	0.94	0.90	2.80	
									Post-monsoon	2.40	1.75	1.10		
39	Narayanapalli	Road to Buddaram 18°17'39.949", 79°53'14.750"	Velpula Saraiah	Domestic	1.50	8.00		0.40	Winter	3.50	2.76	6.66	3.40	
									Pre-monsoon	3.95	3.83	6.70	6.45	
									Monsoon	2.26	0.47	0.70	3.46	
									Post-monsoon	1.37	1.10	2.79		
40	Ghanpur (Pochamma wada)	Ramalingeshwara swami temple lane, 18°18'39.798", 79°52'42.364"	Govt well C/o Jakku Ravindar	Domestic	1.75	8.30		0.30	Winter	2.86	1.26	1.72	1.20	
									Pre-monsoon	4.44	2.72	2.14	2.22	
									Monsoon	0.66	0.48	0.40	0.95	
									Post-monsoon	0.55	0.55	0.82		
41	Gandhinagar	Road to Ghanpur 18°19'13.60", 79°50'07.89"	Pallaboina Badraiah	Domestic	2.00	7.85		GL	Winter	1.70	2.00	1.45	1.82	
									Pre-monsoon	1.95	1.77	1.86	WD	
									Monsoon	0.70	0.37	0.60	WD	
									Post-monsoon	0.64	1.00	1.07		
42	Mailaram	TDP Flag	Govt	Dom	2.00	11.30		0.40	Winter	2.38	1.80	2.85	2.14	

		Lane 18°18'06.610 ", 79°49'28.425 "	well, C/o Gone Sammai ah	estic					Pre- monsoon	3.17	3.54	2.40	3.53	
									Monsoon	0.87	0.38	0.75	2.80	
									Post- monsoon	1.15	0.75	1.32		
43	Bambulagada	Near Mamidi Kanakaraju Mango Plantation 18°27'17.00", 79°52'15.60"	Between n KTKOC -I-PW4 & KTKOC -II-PW4	DW	0.90	4.25		0.75	Winter		1.30	1.47	1.34	
									Pre- monsoon		2.54	1.94	2.00	
									Monsoon		0.89	0.65	0.70	
									Post- monsoon		0.79	0.76		

Block/Mine: KTK OC-III

Piezo metric well no.	Location	Depth(m)	Dia (m)	Measuring point (m)	Period				
						2019	2020	2021	2022
KLP-PW1	Basavarajupalle, Near old Weigh Bridge / KLP, 18°22'05.54"N, 79°53'03.40"E	50 0.	10	0.65	Winter	--	20.34	20.41	NA
					Pre-monsoon	--	25.43	20.52	23.80
					Monsoon	14.58	9.03	14.10	12.53
					Post-monsoon	14.43	16.66		
KLP-PW2	Parashurampalle, Near Tank Opp. Sanga Badraiah House, 18°21'40.39"N, 79°53'30.27"E	41	0.10	0.60	Winter	--		27.35	*AB(Villagers are converted Pz well into Handpump for domestic use)
					Pre-monsoon	--		17.60	
					Monsoon	8.02	8.55	*WD(Villagers are converted Pz well into Handpump for domestic use)	
					Post-monsoon	5.13	12.45		
KLP-PW3	Jangupalle, Near Govt. Primary School, 18°22'44.92"N, 79°53'28.95"E	50	0.10	0.60	Winter	--	22.14	18.45	20.08
					Pre-monsoon	--	24.04	18.60	21.80
					Monsoon	5.17	17.42	17.50	16.40
					Post-monsoon	21.18	17.07		
KLP-PW4	Peddapur, Near Hanuman Temple, 18°22'37.44"N, 79°54'28.35"E	69	0.10	0.65	Winter	--	16.62	20.45 (GodHanuman Devotees pumping water from the pzb well)	**21.63m (GodHanuman Devotees pumping water from the pzb well)
					Pre-monsoon	--	25.40	**22.90 (GodHanuman Devotees pumping water from the pzb well)	*NR (GodHanuman Devotees pumping water from the pzb well)
					Monsoon	19.71	19.07	**20.86 (GodHanuman Devotees pumping water from the pzb well)	*16.42 (GodHanuman Devotees pumping water from the pzb well)
					Post-monsoon	17.33	19.28		

Ground Water Compliance:**Ground Water Clearance Lr. No: 1862/T/2003-04/755, Date-05-11-2005.**

Sl. No.	G.W Clearance Conditions.	Status.
1.	Rain water Harvesting structures should be taken up in all villages with a radius of 10 kms. Of the project area to divert the pumped out ground water from the proposed mines.	Complied
2.	Precautions should be taken to prevent pollution of the local surface and ground water sources.	Two no's of Sewage Treatment Plants are provided in the area to prevent the water pollution of local surface and ground water sources.
3.	Periodical monitoring of ground water levels and quality (every month) should be under taken and reports submitted to the Dy. Director, Ground Water Dept., Warangal.	In this area Phreatic Surface is monitoring in 36 locations for ground water levels. And also every month taking water quality.
4.	Aforestation in surrounding areas should be taken up.	In the surrounding area around 38 Ha. of plantation has completed.
5.	Provisions should be made to maintain the present use/ supply of ground water in and around the area and also its restoration due to any adverse effects as a result of mining in future.	Excess water from the mine is let out to nearby village tanks and agriculture fields.

The Environmental Management Committee meeting of KTK OC-III was held on 20.8.2022 at 4.00 PM at Project Office of KTK OC-3 PROJECT

The below members were participated in the meeting.

	S/Shri
1	Project Officer
2	Project Manager
3	Project Engineer
4	Operational Manager (OC)
5	Operational Manager (UG)
6	Safety Officer
7	Area Env. Officer
8	Mine Env. Incharge
9	Sr. Forest officer
10	Survey Officer
11	Mine Engineer
12	Civil Engineer

Minutes of the meeting.

1. Environmental officer Sri.K.Sravan inaugurated the meeting. All the officers present along with the colliery manager Sri C.R.B Prasad Rao.
2. During the meeting discussed the EC condition by the environmental officer.
3. Each and every point of the EC conditions discussed in detail.
4. Formation of mine level environment committee suggested by the colliery manager Sri C.R.B Prasad Rao.
5. Later Mine OC Section manager Sri E.Srinivas, explained about the green belt development and CAAQMS station cleaning and its working website.
6. Safety officer, Sri A.Uma maeshwar rao appraised the water spraying arrangements at surface roads, quarry and cleaning of settling ponds and fencing.,
7. Later Sri.Mohan reddy, Pit Engineer explained the filter bed enhancement and detailed plan of purification of filter bed water.
8. Project officer discussed about PPEM data and control measures regarding dust suppression and water control measure.,and discussed about mechanical sweeping machine and suggested to put a note.
9. Sri A.Kumaraswamy survey officer instited the Water management plans.
10. Sri.M. SAIKRISHNA Sr.PO explained the PME of the workmen.











The Singareni Collieries Company Limited

(A Government Company)
Reg. office: Kothagudem Collieries-507101,
Bhadadri Kothagudem Dist. Telangana State
GST No: 36AAACT8873F1Z1

Finance & Accounts Dept.
O/o General Manager,
Bhupalpalli-506169

Phone No.08713-220515
Fax No.08713-220208
e-mail : fad_bhp@scclmines.com
Website : www.scclmines.com

Ref.No. BHP/FAD/C Cost/2022/2840

Date: 04.11.2022

SOM (Env.)/BHP.

Sub:- Requisition for Capital & Revenue Environmental expenditure during the period April' 2022 to September'2022- Reg.
Ref:- BHP/ENV/46/2022/102, dt.28.10.2022.

With reference to the above, we furnish hereunder the Capital & Revenue Environmental Expenditure pertaining to KTK-1, KTK-5, KTK-6, KTK-8, KTKOC-2, KTKOC-3, Area Hospital, Area Workshop and Area stores during April'2022 to September 2022.

Mine/Dept.	Capital Rs. (From April'22 to September'22) Rs.	Revenue Rs. (From April'22 to September'22) Rs.	Total Rs.
KTK-1 Incline	0.00	3,08,66,023.00	3,08,66,023.00
KTK-5 Incline	0.00	5,17,35,843.00	5,17,35,843.00
KTK-6 Incline	0.00	2,56,43,171.00	2,56,43,171.00
KTK-8 Incline	0.00	1,79,80,768.00	1,79,80,768.00
KTKOC-2	1,10,38,996.44	7,56,55,643.00	8,66,94,639.44
KTKOC-3	3,41,879.52	0.00	3,41,879.52
Area Hospital	0.00	70,53,816.00	70,53,816.00
Area Workshop	0.00	10,13,715.00	10,13,715.00
Area Stores	0.00	1,72,946.00	1,72,946.00
Total	1,13,80,875.96	21,01,21,925.00	22,15,02,800.96


FINANCE MANAGER/BHP.

PLI

Annexure-16

पॉलिसी अनुसूची/ Policy Schedule - Public Liability Insurance Act	
Policy Number: 550200492210000013	व्यवसाय स्रोत / Business Source: 550200
जारीकर्ता कार्यालय/Issuing Office कार्यालय कोड/ Office Code: 550200 कार्यालय पता/ Office Address: HYDERABAD DIVISION II CSR Plaza,D No. 6-3-347/9/4,2nd Floor,Dwarakapuri Colony/Punjagutta,Hyderabad - 500082. State Code: 36 ,Telangana GSTIN: 36AAACN9967E6ZZ Contact Number: 40 23401398 Mobile Number:	विक्रय चैनल विवरण/ Sales Channel Details कोड/ Code: 550200 नाम/ Name: Hyderabad Division II Contact Number: सह दलाल कोड / Co Broker Code: कस्टमर केयर टॉल फ्री नंबर/ Customer Care Toll Free Number: 1800 345 0330 ईमेल/ email:customer.support@nic.co.in

ग्राहक का नाम/ Customer Name: MS THE SINGARENI COLLIERIES CO LTD	ग्राहक आईडी/ Customer ID: 9510115064	पैन/ PAN: AACT8873F
पता/ Address: CORPORATE FINANCE & ACCOUNTS DEPARTMENT, PO. KOTHAGUDEM COLLIERIES, BHADRACHAI AM ROAD RI Y STN(S C RI Y), BHADRADRI KOTHAGUDEM DISTRICT, TELANGANA, City: KOTHAGUDEM, District: KHAMMAM, State: TELANGANA, PIN: 507101. Cell: 1111111111	फोन/ Phone: ई-मेल/ E-Mail: fad_crp@sclmines.com	

पॉलिसी: 30/04/2022 के 00:00 से 29/04/2023 की मध्य रात्रि तक प्रभावी / Policy Effective from 00:00 hours, on 30/04/2022 to midnight of 29/04/2023			
प्रीमियम /Premium	₹ 47,699.32	कवर नोट संख्या तथा तिथि/ Cover Note Number and Date	NA
CGST	₹ 4,293.00	पुरस्ताव संख्या और तिथि/ Proposal Number and Date	8800210427772930 Dt. 01/03/2022
SGST/UTGST	₹ 4,293.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/ Kerala Flood Cess	₹ 0.00		
कम: जीएसटी टैडएस / Less: GST TDS	₹ 0.00	रसीद संख्या और तिथि/ Receipt Number and Date	550200812210000039,550200812210000008 Dt. 07/04/2022, 04/04/2022
पुनर्प्राप्त स्टाम्प शुल्क / Recoverable Stamp Duty	₹ 0.00	पछिली पॉलिसी संख्या तथा समाप्ती तिथि/ Previous Policy Number and Expiry Date	550200492110000009 and Dt.29/04/2022
कुल राशि/ Total Amount*	₹ 1,03,984.00	(Rupees One Lakh Three Thousand Nine Hundred Eighty Four Only.)	
* पर्यावरण राहत कोष / Environment Relief Fund: ₹ 47,698.68			

Insurance Details:

Policy Effective from 00:00 hours, on 30/04/2022 to midnight of 29/04/2023	
PLI act Premium	23,608.00
Service tax	0.00
Recoverable stamp duty	0.00
ERF premium	23,608.00
Total amount	47,216.00

Retroactive date:	30/04/2019
Description of risk	PLI ACT POLICY -HAZAROUDES SUBSTANCES HANDLED & GROUP SUCH AS EXPLOSIVES, OIL, LUBRICANTS, GASES, TIMBER AND OTHER HAZARDOUS MATERIALS.
Paid up capital/Market Value of Asset/stock:	1,00,00,000.00
Liability: Any one accident(AOA):	5,00,00,000.00
Any one year(AOY):	15,00,00,000.00

पॉलिसी अनुसूची/ Policy Schedule - Public Liability Insurance Act	
Policy Number: 550200492210000013	व्यवसाय स्रोत / Business Source: 550200
जारीकर्ता कार्यालय/ Issuing Office कार्यालय कोड/ Office Code: 550200 कार्यालय पता/ Office Address: HYDERABAD DIVISION II CSR Plaza, D No. 6-3-347/9/4, 2nd Floor, Dwarakapuri Colony Punjagutta, Hyderabad - 500082. State Code: 36, Telangana GSTIN: 36AAACN9967E6ZZ Contact Number: 40 23401398 Mobile Number:	वित्तिय चैनल वविरण/ Sales Channel Details कोड/ Code: 550200 नाम/ Name: Hyderabad Division II Contact Number: सह दलाल कोड / Co Broker Code: कस्टमर केयर टॉल फ्री नंबर/ Customer Care Toll Free Number: 1800 345 0330 ईमेल/ email:customer.support@nic.co.in
Ratio of AOA:AOY:	1:3
Sum Insured:	5,00,00,000.00
Annual turn over:	1,47,45,34,00,000.00

Clauses	As per Annexure.I
टिप्पणियाँ/ Remarks: PUBLIC LIABILITY INSURANCE (ACT) POLICY	
VARIOUS TRANSPORT & STORAGE LOCATIONS OF SCLL (ALL AREAS) LIKE KOTHAGUDEM, YELLANDU, MANUGURU, RAMAGUNDAM -I, RG-II, RG-III, BHOOPALPALLI, BELLAMPALLI, MANDAMARRI, SRIRAMPUR & CORPORATE, TELANGANA STATE.	
NUMBER OF WORKMEN EMPLOYEES :43511	
ESTIMATED ANNUAL TURNOVER (2022-23) : RS.14745.34 CRORES	
PREVIOUS YEAR TURNOVER : RS.13404.85 CRORES	
AOA: 5 CRORES	
AOY : 15 CRORES (1:3)	
PAID UP CAPITAL INVESTMENT AS ON 31.12.201 : RS.1733.20 CRORES.	

जसिकी गवाही मे दनि/ माह /वर्ष को उपरोक्त उल्लेखित कार्यालय पते पर अधोहस्ताक्षरी को वधिवित अधकित कयि जा रहा है उसके हाथ नरिधारित करि जाए। यह अनुसूची, संलग्न पॉलिसी, खण्ड, पृष्ठकन और पॉलिसी शब्दों, जो कंपनी वेबसाईट <https://nationalinsurance.nic.co.in> पर उपलब्ध है, को एक अनुबंध के रूप में एक साथ पढा जाए तथा कोई भी शब्द या अभिव्यक्ति जिसके लिए यह विशिष्ट अर्थ पॉलिसी या अनुसूची के कसि भी हसिसे मे संलग्न कयि गया हो, एक ही अर्थ वहन करेगा चाहे जहाँ भी उल्लेखित हो। यह आश्वासन दयि जाता है कि प्रीमियम चेक के अस्वीकर्त के मामले मे, यह दस्तावेज स्वतः प्राथमकता नरिस्त हो जाएगी। **IN WITNESS WHEREOF, the undersigned being duly authorized hereunto set his/ her hand at the office address mentioned above, this 06/May/2022. This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website <https://nationalinsurance.nic.co.in> shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'**

इशयोरनसइडयिलमिडिड

सुटाप इयुलमिडिड/
Stamp
Duty:
(₹ 0.25)

कुते नेशनल इन्शुरेरन्स कंपनी
For and on behalf of National Insurance
Company Limited
अधकित हस्तात्क्षरकस्ता/ Authorized
Signatory

TAX INVOICE

Invoice Serial No: 30602L2P0000013

Invoice Date: 06/05/2022

Details of Supplier:

National Insurance Company Limited.,
HYDERABAD DIVISION II CSR Plaza,D No. 6-3-347/9/4,2nd Floor,Dwarakapuri Colony,Funjagutta,Hyderabad - 500082
State : 36 ,Telangana
GSTIN No : 36AAACN9667E6ZZ

Details Of Receiver : MS THE SINGARENI COLLIERIES CO LTD

Address : CORPORATE FINANCE & ACCOUNTS DEPARTMENT, PO. KOTHAGUDEM COLLIERIES, BHADRACHALAM ROAD RLY STN(S C RLY),
BHADRADRI KOTHAGUDEM DISTRICT, TELANGANA
City : KOTHAGUDEM,
District: KHAMMAM,
State: TELANGANA,
PIN: 507101.

Place Of Supply State : Telangana
State Code : 36
GSTIN No : 36AAACT8673F1Z1

सैक कोड/ SAC Code	सेवा का विवरण/ Description of Service	कुल/Total(₹)	छूट/ Discount	टैक्स योग्य/ मूल्य/Taxable Value(₹)	सीजीएसटी की राशि/ CGST		एसजीएसटी/यूटीजीएसटी/ SGST/UTGST		आईजीएसटी/IGST		केरला बाढ़ उपकर/Kerala Flood Cess
					दर/Rate	राशि/ Amount(₹)	दर/Rate	राशि/ Amount(₹)	दर/Rate	राशि/ Amount(₹)	राशि/Amount(₹)
997139	Other non-life insurance services (excluding reinsurance services)	47,699	0%	47,699	9%	4,293	9%	4,293	0%	0	0
TOTAL		47,699		47,699		4,293		4,293		0	0

कुल इनवॉयस मूल्य (अंकों में) Total Invoice Value (In figures) :
₹ 1,03,984

कुल इनवॉयस मूल्य (शब्दों में) Total Invoice Value (In words) : रूपए/Rupees
One Lakh Three Thousand Nine Hundred Eighty Four

केवल/Only.

रिवर्स चार्ज के अधीन टैक्स की राशि Amount of Tax Subject to Reverse Charge : No

E.&O.E

कृते नेशनल इन्शुरेंस कंपनी लिमिटेड, For
and on behalf of National Insurance Company Limited

अधिकृत हस्ताक्षरकर्ता/ Authorized Signatory

