

**SIX MONTHLY REPORT
OF**

**EMP CLEARANCE
[J-11015/311/2010 –IA.II(M)]**

**for the period October 22 – March 23
(1st June 2023)**



**K.D.HESALONG OPENCAST PROJECT
N K AREA**

CENTRAL COALFIELDS LIMITED
(A Miniratna Company)

Environmental safeguard stipulated in office memorandum no. J-11015/311/I0-IA.II(M) dated 14.07.2020 of MoEF for K.D.Hesalong opencast mine and its implementation status for the period October 22 to March 23.

Conditions of EC J-11015/311/I0-IA.II(M) dated 14.07.2020		
I.	All partial conditions observed by Ministry's Regional Office in its report dated 14th April, 2020 on the basis of site visit dated 3rd March, 2020 shall be completed within 1 year and separate compliance report should be submitted to the Regional Office. If the conditions still not fully complied then the Regional Office may issue a show cause notice to the PP and accordingly inform the EAC (Coal) . EAC coal sector shall recommend for revocation of the EC, if conditions were not fully complied.	The compliance of conditions is under process
II.	Further, no expansion proposal will be considered, if EC conditions are not complied within stipulated timeframes.	Agreed
III.	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.	Water sprinkling system is provided at crushers and siding to check the fugitive emission of dust. Water sprinkling by mobile water tankers is also done at roads. 23 Fixed water sprinklers have been installed at siding
IV.	Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.	PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2022. Details of PME/ IME of last five years enclosed as annexure A
V.	Persons of nearby villages shall be given training on livelihood and skill development to make them employable.	Agreed
VI.	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	Plantations are being continuously carried out in the project around the active mining area

VII.	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	Runoff water collected in the mine sumps is being utilized in the project
VIII.	Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured	Same as condition iv
IX.	Active OB dump should not be kept barren/open and should be covered by temporary grass to avoid airborne particles	Grassing on the active OB dumps could only be carried out once the OB dumps reach the approved height
X.	Project Proponent shall obtain blasting permission from DGMS for conducting mining operations near villages and also explore deployment of rock breakers of 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.	Blasting carried out in controllable manner between 14:00- 15:00 hrs as per DGMS statute
XI.	The Project Proponent shall comply with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors. The State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department in strict compliance of judgment of Hon'ble Supreme Court dated the 3rd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.	Agreed
XII.	Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the project and maintain records accordingly; also, occupational health check-up for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures be taken..	PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2023. Details of PME/ IME of last five years enclosed as annexure A

	The recommendations of the National Institute for ensuring good occupational environment for mine workers shall be implemented; The preventive measures for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.	
XIII.	The Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th 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 mine lease area	agreed
XIV.	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequently, sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitation have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.	The illumination is directed towards the mine in the project. Also Blasting carried out in controllable manner between 14:00- 15:00 hrs
XV.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	As per the EIA/EMP of KDH OCP no endangered species of flora and fauna have been spotted in the project
XVI.	Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a	Continuous mine closure activities are being carried out in the project

	<p>condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of MOEFCC</p>	
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Environmental safeguard stipulated in office memorandum no. J-11015/311/2010-IA.II (M) dated: 31.01.2015 of MoEF for K.D.Hesalong opencast mine and its implementation status for the period October - 22 to March -23

A	Specific Conditions																			
S.No.	Condition	Compliance																		
I.	The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC	<p>This condition is strictly followed. The production details for last five years is as follows</p> <table border="1" data-bbox="938 1301 1339 1845"> <thead> <tr> <th>Year</th> <th>Coal (MT)</th> </tr> </thead> <tbody> <tr> <td>2015-16</td> <td>1213840</td> </tr> <tr> <td>2016-17</td> <td>1367731</td> </tr> <tr> <td>2017-18</td> <td>770760</td> </tr> <tr> <td>2018-19</td> <td>386840</td> </tr> <tr> <td>2019-20</td> <td>593320</td> </tr> <tr> <td>2020-21</td> <td>1237598.9</td> </tr> <tr> <td>2021-22</td> <td>950704</td> </tr> <tr> <td>2022 – 23</td> <td>432136</td> </tr> </tbody> </table>	Year	Coal (MT)	2015-16	1213840	2016-17	1367731	2017-18	770760	2018-19	386840	2019-20	593320	2020-21	1237598.9	2021-22	950704	2022 – 23	432136
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II.	No mining operations shall be undertaken of forestland until prior clearance has been obtained under the provisions	No mining activity is undertaken in forestland without proper clearances																		



	of FC Act, 1980.													
III.	All safety measures shall be taken as per Coal Mining Regulation Act, 1957 & related Circulars.	<p>Mining is being done as per DGMS statute. Mining shoe, helmet , florescent jacket , hand gloves dust masks, safety belt etc are regularly distributed to workers.</p> <p>The details of Ear muff and helmet area as follows</p> <table border="1"> <thead> <tr> <th></th> <th>Ear Muff/ Ear plug</th> <th>Helmet</th> </tr> </thead> <tbody> <tr> <td>2019</td> <td>10</td> <td>32</td> </tr> <tr> <td>2020</td> <td>35</td> <td>31</td> </tr> <tr> <td>2021</td> <td>16</td> <td>25</td> </tr> </tbody> </table> <p>Also regular pit safety meeting and mock rehearsals are done.</p> <p>benching and slope in active mining area is being maintained</p> <p>The OB dumps showing steep gradient are active in nature. Once the dump reaches its required dimensions the slope of the OB dumps will be ensured to be less than 28⁰.</p>		Ear Muff/ Ear plug	Helmet	2019	10	32	2020	35	31	2021	16	25
	Ear Muff/ Ear plug	Helmet												
2019	10	32												
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IV.	Mining shall be carried out as per statuette from the streams/nallahs flowing within the lease and maintaining a safe distance from River Konar flowing along the lease boundary.	the mining is being carried out as per statuette also a safe distance is being maintained between river damodar and mine												
V.	Topsoil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.	Top soil is preserved at an earmarked site. The top soil is then used for plantation on OB dumps. However for the year 2017-18 and 2018-19,2019-20, 2020-21 no fresh land has been broken thereby no top soil has been produced												
VI.	There will no external OB dumps at the end of mining.	All the Dumps in KDH OCP are internal in nature												
VII.	Rs. 225 Lakhs/annum as committed towards CSR activities be provided.	A detailed yearly CSR plan is prepared for and in consultation with the local communities by CCL management. CSR scheme has been implemented. An amount of Rs 147.8 lakh has been spent on different CSR activities by NK Area for the year 2022-23 The CSR activities are approved by CCL CSR committee with consultation of local communities The details of CSR activities is as follows:												

Year	Total Expenditure
	(In lakhs)
2017-18	51.0
2018-19	58.5
2019-20	30.6
2020-21	49.4
2021-22	68.4
2022-23	147.8

The main activities of CSR program of NK Area are as follows:


- Health camps conducted at area level
- CCL Laal and Laadli – meritorious students are selected and given 2 years of education, fooding & lodging, coaching for engineering preparation after 10th standard free of cost. Many students have become engineers or chosen other successful career path since inception. One such student qualified and is working at NK area as an officer
- CCL Covid crisis scholarship- students who lost their parents during covid are being provided scholarships to study. 4 are from NK Area
- Children have been selected and trained at JSSPS khelgaon Ranchi, along with free education , fooding and lodging and monthly stipend. Sports cadets from JSSPS have won more than 100 medals at state, national and international level
- HMV training with license have been provided to youths. 10 from NK area
- ITI at BTTI Bhurkunda
- Diploma programme from CIPET Ranchi
- Machine operating training at Jharkhand tool room has started
- Dairy and fishery training has been conducted at NK Area
- Consensus with BAU and ICAR ranchi to start farming training for beneficiaries


VIII. Mine void at the end of	Agreed. This condition will be fulfilled at the end of
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	mining will be of minimum depth.	mining life
IX.	Rain water harvesting and other facilities should be created for ground water recharge.	<p>Mine Sumps(~ 150 million gal capacity) are used for rain water harvesting purposes. Also rooftop rainwater harvesting system has been created in project office building</p> <p>Rain water harvesting pit construction has been completed at ATC, NK area</p> 
X.	Surface run off must pass through the settling tank before discharged into the water body.	<p>Three Sedimentation tanks are provided to treat water. The water from these sedimentation tanks is used in water sprinkling</p> 
XI.	Coal transportation in pit by Dumpers Surface to Siding By trucks and loading at siding into rail Wagons which is at a distance of 1.5 KM from project.	Coal transportation is carried out by Dumpers from surface to siding which is inside leasehold boundary of KDH OCP
XII.	The production shall be within the same Mining Lease area.	The production is within mining lease area
XIII.	The depth of the internal void shall be 40m in from the ground level and should be adequate for fishery purpose.	Agreed, This condition will be fully complied at the end of mine life


XIV.	The production shall be within the same Mining Lease area.	The production is within mining lease area														
XV.	The OB shall be completely re-handled at the end of the mining.	Agreed. The OB will be completely re-handled at the end of the mining.														
XVI.	The rest of the area will be back filled upto the ground level and covered with about a meter thick top soil and put to use.	Agreed This condition will be fully complied at the end of mine life														
XVII.	Garland drains be provided.	<p>Construction of garland drains is been carried out . annexure C</p> <table border="1"> <thead> <tr> <th>Description of Garland Drain</th> <th>Length in Km.</th> </tr> </thead> <tbody> <tr> <td>Garland Drain along OB Dump & CT Road</td> <td>1.290</td> </tr> <tr> <td>Garland Drain along old dump of 'B' Block</td> <td>0.360</td> </tr> <tr> <td>Garland Drain along CT Road near old CHP</td> <td>0.210</td> </tr> <tr> <td>Garland Drain along Boundary of outer side of Dozer Section</td> <td>0.300</td> </tr> <tr> <td>Garland Drain along Railway Siding</td> <td>0.350</td> </tr> <tr> <td>Total</td> <td>2.510</td> </tr> </tbody> </table>	Description of Garland Drain	Length in Km.	Garland Drain along OB Dump & CT Road	1.290	Garland Drain along old dump of 'B' Block	0.360	Garland Drain along CT Road near old CHP	0.210	Garland Drain along Boundary of outer side of Dozer Section	0.300	Garland Drain along Railway Siding	0.350	Total	2.510
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XVIII.	Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine	Embankment in KDH OCP has been developed in late 1990s and is stabilized now. Plantation over embankment has been done. Length of embankment is about 1.2 km														
XIX.	The land after mining shall be brought back for agriculture purpose to the extent possible.	Agreed. This will be done at end of mine life														
XX.	The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.	<p>A detailed yearly CSR plan is prepared for and in consultation with the local communities by CCL management. CSR scheme has been implemented. An amount of Rs 147.8 lakh has been spent on different CSR activities by NK Area for the year 2022-23 The CSR activities are approved by CCL CSR committee with consultation of local communities The details of CSR activities is as follows:</p> <table border="1"> <thead> <tr> <th rowspan="2">Year</th> <th>Total Expenditure</th> </tr> <tr> <th>(In lakhs)</th> </tr> </thead> <tbody> </tbody> </table>	Year	Total Expenditure	(In lakhs)											
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XXI.	Everybody in the core area should be provided with mask for protection against fugitive dust emissions.	About 200 no of dust masks have been distributed to workers engaged in mining activity in KDH OCP												
XXII.	Dust mask to be provided to	This condition is regularly complied with												

	everyone working in the mining area.	
XXIII.	The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.	Agreed
XXIV.	People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area.	PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2023. Details of PME/ IME of last five years enclosed as annexure A
XXV.	The mining area should be surrounded by green belt having thick closed thick canopy of the tree cover.	Details of plantation is shown in annexure B. More plantation will be done though out life of mine
XXVI.	The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to withstand the peak water flow and prevent mine inundation	Embankment in KDH OCP has been developed in late 90s which has been stabilized with massive Plantation. Length of embankment is about 1.2 km
XXVII.	There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.	Dense plantation on OB dumps has been done to prevent any overflow of OB into the river or nallah . Also there are no agricultural fields near KDH mine. Construction of toe wall to prevent overflow of OB 

		
XXVIII.	<p>OB shall be stacked at one internal OB dumpsite only. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forests & Climate Change and its concerned Regional office on yearly basis</p>	<p>All the OB generated during mining operation is being dumped in the decoaled quarry area. Also once the active dumps reached required height from the mine floor biological reclamation of the same is done. The details of reclamation is as follows Land Broken = 353 ha Land used in infrastructure = 179.82 Ha Technically Reclaimed area = 198 Ha (approximately) Biologically reclaimed area = 185.88 Ha Plantation in an area of 4.00 ha has been done in 2018-19</p>
XXIX.	<p>Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper</p>	<p>Catch drains are constructed near the OB dumps (Annexure C) The drains are regularly cleaned Catch drains are being constructed and siltation ponds are provided. 1 mine sumps with a combined capacity of about 70 million gallon and high water retention time have been developed in the mines. The project has also constructed 3 artificial sedimentation tanks for treatment of wastewater. The treated water is then used in water sprinkling system in the railway siding</p>

	settling of silt material	
XXX.	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check runoff and siltation shall be based on the rainfall data	<p>Retaining wall has been constructed at the dumps which at the edge of mine or near transportation road. As all the dumps are internal in nature more retaining wall will be made if required throughout the life of mine</p>   
XXXI.	Crushers at the CHP of adequate capacity for the expansion project shall be	Water sprinkling system is provided at crushers and siding to check the fugitive emission of dust. Water sprinkling by mobile water tankers is also done at

	operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.	roads. 23 Fixed water sprinklers have been installed at siding. Photographs of water sprinkling system in Annexure D
XXXII.	Drills shall be wet operated.	All drills are Wet operated as per DGMS rules
XXXIII.	The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads,	Plantation around 6.6 km roads have been done in the project (annexure B). 4.2 km PCC mineral transportation has been developed in the project 
XXXIV.	Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	Blasting carried out in controllable manner between 14:00- 15:00 hrs
XXXV.	A Progressive afforestation plan shall be implemented covering an area of 272.02 ha at the end of mining, which includes reclaimed Internal OB dump area (192.42 ha), along roads and Green belt (36.28 ha) and in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha, Massive plantation shall be carried	Progressive plantations in consultation with forest department of Jharkhand is carried out. Plantation as per annexure B has been done in the project. However more plantations will be done throughout the life of the mine

	out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine							
XXXVI.	An estimated total 188.13 Mm' of OB will be generated during the entire life of the mine. 188.13 Mm ³ of will be one internal OB dump in covering an area of 192.42 ha with height of 30 in. There are no external OB dumps. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.	This condition will be complied once mine age ends						
XXXVII.	The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.	All the OB produced during mining is backfilled in decoaled quarry area as per mining plan. Also once the active dumps reached required height from the mine floor biological reclamation of the same is done. The details of reclamation is as follows Land Broken = 353 ha Land used in infrastructure = 179.82 Ha Technically Reclaimed area = 198 Ha (approximately) Biologically reclaimed area = 185.88 Ha						
XXXVIII.	Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out	After the technical reclamation of the decoaled area. Plantation is done on the area through out the life of mine. Also project has submitted CA and NPV amount to state government for restoration of waste lands The cost of Compensatory afforestation has been deposited s per details below <table border="1" data-bbox="884 1704 1393 1843"> <thead> <tr> <th>Item</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Compensatory Afforestation</td> <td>Rs 1449300.36</td> </tr> </tbody> </table> <table border="1" data-bbox="786 1883 1508 1993"> <tr> <td>Compensatory Afforestation</td> <td>Rs 42,83,572 DD no 079234 dated 23.10.2006</td> </tr> </table>	Item	Amount	Compensatory Afforestation	Rs 1449300.36	Compensatory Afforestation	Rs 42,83,572 DD no 079234 dated 23.10.2006
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XXXIX.	The mining should be phased out in sustainable manner. No extra over burden dumps are permitted.	Mining is carried out in phased manner. All the overburden in KDH are internal in nature on decoaled area.																					
XL.	No groundwater shall be used for mining operations.	No groundwater is used for mining operations																					
XLI.	Of the total quarry area of 319.04 ha. the backfilled quarry area of 192.42 ha shall be reclaimed with plantation and a void of 126.62 ha at a depth of 40 m which is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilised with plantation/afforestation by planting native plant species	Agreed																					

	<p>in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.</p>	
<p>XLII.</p>	<p>Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment, Forests & climate change and the Central Pollution Control Board quarterly within one month of monitoring.</p>	<p>Regular monitoring of the underground water level is being carried out by a network of existing wells and peizometers</p> <p>New peizometers are being installed as required in and around the core and buffer zone</p> 
<p>XLIII.</p>	<p>The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.</p>	<p>The project has 1 mine sumps with a combined water storing capacity of about 70 million gallon. These sump also act as ground water recharge measure</p> <p>The drinking water if necessary is being supplied to nearby villages from the drinking water treatment plants of NK Area.</p> 
<p>XLIV.</p>	<p>Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater.</p>	<p>A new ETP has been constructed in workshop of KDH OCP</p>

XLV.	<p>Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an specialised agency /institution within the District/State and the results reported to this Ministry and to DGMS.</p>	<p>Health checkup is being done by Central Hospital dakra and Gandinagar Hospital Ranchi</p> <p>PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2022.</p> <p>Details of PME/ IME of last five years enclosed as annexure A</p>
XLVI.	<p>Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National MR Policy or R&R Policy of the State Government whichever is higher.</p>	<p>Compensation carried out in accordance of R&R policy of CCL</p>
XLVII.	<p>For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF&CC and its concerned Regional office</p>	<p>As per the CCL policy a satellite imagery map is prepared every year for KDH OCP</p> <p>The land use pattern map is prepared by CMPDIL, Ranchi and the same is timely submitted to MOEF</p> <p>The latest report is available at https://www.coalindia.in/media/documents/Sat._Monitoring_of_Reclamation_more_than_5_MCM_for_2021-22.pdf</p> <p>The time series map are enclosed as annexure E</p>
XLVIII.	<p>A detailed Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forests & Climate Change within 6 months of grant of Environmental Clearance.</p>	<p>A detailed final mine closure plan has been developed. An amount of Rs 3630.58 lakh has been submitted in the escrow account till 31.03.2022.</p> <p>Also about 17 crore rupees have been reimbursed from escrow account against the reclamation activates carried out in KDH OCP (annexure F)</p>

XLIX.

The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine.

Corporate Environment

- a) The Company shall have a well laid down Environment Policy approved by the Board of Directors.
- b) The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
- c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.

Scheme for CSR work in NK area is done with consultation of local village and administration



A detailed yearly CSR plan is prepared for and in consultation with the local communities by CCL management. CSR scheme has been implemented. An amount of Rs 147.8 lakh has been spent on different CSR activities by NK Area for the year 2022-23. The CSR activities are approved by CCL CSR committee with consultation of local communities. The details of CSR activities is as follows:

Year	Total Expenditure
	(In lakhs)
2017-18	51.0
2018-19	58.5
2019-20	30.6
2020-21	49.4
2021-22	68.4
2022-23	147.8

The main activities of CSR program of NK Area are as follows:


- Health camps conducted at area level
- CCL Laal and Laadli – meritorious students are selected and given 2 years of education, fooding & lodging, coaching for engineering preparation after 10th standard free of cost. Many students have become engineers or chosen other successful career path since inception. One such student qualified and is working at NK area as an officer
- CCL Covid crisis scholarship- students who lost their parents during covid are being

	<p>d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.</p>	<p>provided scholarships to study. 4 are from NK Area</p> <ul style="list-style-type: none"> • Children have been selected and trained at JSSPS khelgaon Ranchi, along with free education , fooding and lodging and monthly stipend. Sports cadets from JSSPS have won more than 100 medals at state, national and international level • HMTV training with license have been provided to youths. 10 from NK area • ITI at BTTI Bhurkunda • Diploma programme from CIPET Ranchi • Machine operating training at Jharkhand tool room has started • Dairy and fishery training has been conducted at NK Area • Consensus with BAU and ICAR ranchi to start farming training for beneficiaries <p>Annexure A</p> <p>The corporate environment responsibility is being implemented. (Annexure G)</p> <p>A pit environmental committee has been established in project (annexure G1)</p>
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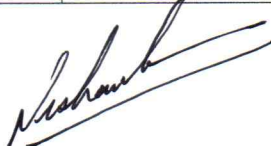
B. General Conditions												
I.	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change	No change in mining technology is done. Mining is carried out by shovel-dumper combination										
II.	No change in the calendar plan of production for quantum of mineral coal shall be made.	<p>No change is made in calendar plan of production. The coal production in last five years is as follows</p> <table border="1" data-bbox="1023 1704 1398 2011"> <thead> <tr> <th>Year</th> <th>Coal (MT)</th> </tr> </thead> <tbody> <tr> <td>2015-16</td> <td>1213840</td> </tr> <tr> <td>2016-17</td> <td>1367731</td> </tr> <tr> <td>2017-18</td> <td>770760</td> </tr> <tr> <td>2018-19</td> <td>386840</td> </tr> </tbody> </table>	Year	Coal (MT)	2015-16	1213840	2016-17	1367731	2017-18	770760	2018-19	386840
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2019-20	593320											
2020-21	1237598.9											
2021-22	950704											
2022- 23	432136											
III.	<p>Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM₁₀, PM₅, SO₂ and NO_x monitoring. 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. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc carried out at least once in six months.</p>		<p>Monitoring of environmental parameters are done every fortnightly by CMPDIL</p> <p>Monitoring stations at PO office, Bhooth Nagar Colony, Water Tanker Filling Station, Karkatta Village, Bishrampur Village and KDH siding colony has been established. Fortnightly analysis of environmental parameters is done at these points</p>									
IV.	<p>Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NO_x) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EPA rules, 1986 shall be furnished as part of compliance report.</p>		<p>The data on air quality is submitted along the six monthly compliance reports.</p>									
V.	<p>Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.</p>		<p>Adequate measures for control of noise pollution have been taken. Ear muffs are continuously been distributed to the personals. Also Noise level data is being monitored in the core zone.</p>									
VI.	<p>Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended</p>		<p>An ETP has been constructed in workshop for treatment of effluents. The ETP has a closed water circuit. The treated water is recycled for washing of HEMMs in the workshop.</p>									


	from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.							
VII.	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Vehicular emissions are kept under control. The mineral transporting vehicles are optimally loaded and covered with tarpaulins. To prevent dust emission 3 mobile water tankers of 28kl are deployed in KDH mine. Also 16 static water sprinklers have been installed in the siding						
VIII.	Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analyzed through a laboratory recognized under EPA Rules, 1986.	Monitoring is carried out by CMPDI Ranchi which has a laboratory recognized under EPA Rules, 1986.						
IX.	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.	Adequate number of dust mask are been distributed to the personnels working in dusty areas.						
X.	Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed and records maintained thereof. The quality of environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing	Regular periodic health examination of the workers is carried out in central hospital Dakra. PME for all the work force at regular intervals are being done at central hospital Dakra. In the year 2022, PME of 743 employees of NK Area had been done in calendar year 2023. Details of PME/ IME of last five years enclosed as annexure A						
XI.	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.	A separate environment cell has been set up. The composition of the team is as follows: 1) HQ level: HOD (Environment) 2) Area Level : Environment Officer 3) Project level: Project Officer Environment Officer (project) Also a project level environmental committee has been made (annexure G1)						
XII.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this	Separate account in capital budget has been made for environmental funds <table border="1" data-bbox="890 1944 1508 2018"> <thead> <tr> <th>S. No.</th> <th>Work (2019-20)</th> <th>Amount (in Rs.)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	S. No.	Work (2019-20)	Amount (in Rs.)			
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XIII.	The Project authorities shall advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the Ministry of Environment, Forests & Climate Change at http://envfor.nic.in .	<p>Advertisements have been published in Hindustan Times Ranchi dt.3/04/2015 and Prabhat Khabar Ranchi dt.3/04/2015.</p>  <p>Fri, 03 April 2015 https://epaper.prabhatkhabar.com/c/488</p>																					
XIV.	A copy of the environmental clearance letter shall be marked to concern Panchayat/Zila Parishad, Municipal Corporation or Urban local body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on company's website.	Copy of EC has been communicated to concern panchayats (annexure H)																					
XV.	A copy of the environmental clearance letter shall be shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days.	The copy of EC was displayed at the Regional Office, District Industry Sector and Collector's Office/Tehsildar's Office for 30 days in march –april 2015																					
XVI.	The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated	Copy of clearance letter is displayed on company website http://www.centralcoalfields.in/sutbs/envr_clrc																					

	environmental clearance conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM ₁₀ , PM _{2.5} , SO ₂ , and NO _x (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website.	e.php)
XVII.	The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Office s of CPCB and the SPCB.	Agreed. Regular reports are submitted
XVIII.	The Regional Office of this Ministry located in the Region shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	agreed
XIX.	The Environmental statement for each financial year ending 31 March in For — V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail.	The environmental statements are submitted before September of each year


Dy Manager (Envt)
NK Area

(F.) Arvind Saurabh
27-5-23
Environment Officer/ IC
KDH OCP
NK Area


Project Officer
KDH OCP
NK Area

Annexure B

Plantation in KDH OCP

Name of Project	Year of plantation	Area	Category of land	Nos. of plants planted	Main species
KDH OCP	1992-'93	31.00 Ha.	O.B.Dump	72,975	Acacia, Gamhar, Sisham, Subabul, Karanj, Kathsagwan, Chakundi, Eucalyptus, Ber, Amla, Emli, Khair, Babul, Bamboo, Menzium, etc.
	1994-'95	1.00 Km.	Avenue (along railway track)	2,000	
	1998-'99	20.05 Ha. 2.00 Km.	O.B .Dump Avenue (along haul road)	51,125 6'510	
	2000-'01	18.00 Ha. 9.30 Ha. 0.60 Km.	O.B.Dump Plain land Avenue (colony)	45,000 23,250 2'400	
	2001-'02	4.00 Ha.	O.B.Dump	10'000	
	2002-'03	4.00 Ha.	O.B.Dump	10'000	
	2005-'06	20.00 Ha.	O.B.Dump	50,000	
	2006-'07	5.00 Ha.	O.B.Dump	12,500	
	2007-'08	4.00 Ha.	O.B.Dump	10,000	
	2008-'09	6.00 Ha.	O.B.Dump	15,000	
	2012-'13	33.00 Ha	O.B.Dump	82,500	
	2014-15	23.00 Ha	O.B Dump	57,500	
	2016-17	2.00 Ha 3.0 km	Colony + blanks Road side	5000 1200	
	2017-18	Nil		Nil	
	2018-19	4.00 ha	OB Dump	10,0000	
Total		172.05 Ha. + 11.30 Ha. + 6.60 Km.	O.B. Dump / Plain land / Avenue	4,66,960	

Photographs of Plantation in KDH OCP











Annexure C

Catch drains in KDH OCP



Annexure D

Water Sprinkling System at KDH OCP





Water Sprinkler System in operation at KDH Siding, NK Area



CSR activities in NK Area

NK Area carries out CSR activities in 14 different panchayats of Khalari and Tandwa circle. Some of CSR activities are as follows:

Drinking Water

3 Deep borings, 9 wells, 6 handpumps, 3 water purifiers at Khalari & Mcluskieganj railway station and khalari block





Quarantine library



Graameen Football



शेखर, राकेश एंडरिजम में आयोजित राष्ट्रीय स्तर पर आयोजित का प्रदर्शन, जिला की खेलकूद प्रतियोगिताओं को उपलब्ध करायेगे बेहतर कोच

शेखर, राकेश एंडरिजम में आयोजित राष्ट्रीय स्तर पर आयोजित का प्रदर्शन, जिला की खेलकूद प्रतियोगिताओं को उपलब्ध करायेगे बेहतर कोच

जिला खेलकूद प्रतियोगिताओं को उपलब्ध करायेगे बेहतर कोच

जिला खेलकूद प्रतियोगिताओं को उपलब्ध करायेगे बेहतर कोच

बालिका वर्ग में गणेश स्पोर्टिंग क्लब राय त बालक वर्ग में विश्रामपुर की टीम विजयी

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Distribution of sports items



Swachhta Hi Sewa 2019

1000 cloth bag distribution, social message and branding with help of 3000 pamphlets depicting restriction on use of single use plastic at houses, shops and public places in NK Area



Tricycles for physically challenged

39 tricycles for physically challenged



Village/School health Camps

Total -175 Camps





Construction of toilets



Community hall constructed under CSR scheme of NK Area



Installation of Hand pipes



Construction of well at Mcluskiganj



P.C.C. Road TUMANG (C.D. Scheme) C.C.L.



Construction of road and bridge near Purnadih village

CENTRAL COALFIELDS LIMITED
OFFICE OF THE PROJECT OFFICER
KDH PROJECT

PO/KDH/Safety/2020/212

To
The Project Officer
KDH Project

Dated: 24/5/2020


Subj:- Status of PPE distribution from 15.04.2020 to 24.05.2020.

Dear Sir,

Month	Mining Shoes	Safety Goggles	Safety Helmet	Dust Mask	Ear Muff
15.04.2020 to 24.05.2020	89	61	31	23	35

So, there for I requested you to take needful action.

Yours Faithfully


Safety Officer
KDH Project
24.5.2020

Enclosed: Distribution Copy

OFFICE OF THE COAL CONTROLLER
GOVT OF INDIA
MINISTRY OF COAL
1, COUNCIL HOUSE STREET, KOLKATA-700 001.
Ph. No. 2248 5468 Email:- coalcont-wb@nic.in

F.No.CC/MCPS/KDHOCPC/CCL/19-20/519

Date:-23.09.2019

Notice

The undersigned is directed to say that CCL vide office letter No. GM(UG/MC)/Reim.claim/2019/430 dt. 06.6.2019 had submitted Progressive Mine Closure Monitoring and Audit report of the first phase 2011-12 to 2015-16 conducted by CMPDIL, Ranchi regarding reimbursement of claims under progressive Mine closure Plan of KDH OCP Mine of CCL for an amount of Rs 1845.82788 Lakh from Mine closure Escrow fund of KDH OCP of CCL as per Mine Closure Plan Guidelines dated 7.1.2013. After scrutiny of documents submitted by CCL and inspection report prepared by OSD, CCO, Ranchi, the Technical Committee of CCO (HQ), Kolkata has recommended for reimbursement of Rs. 1839.95 Lakh for the said project.

Before release of fund, it is brought to the notice that if any comments/views by any stake holder of KDH OCP Mine arises, they are invited to submit the same to the Office of the Coal Controller within **15 days positively** from the date of issue of the said notice after which no submission will be accepted.

This issues with the approval of Coal Controller.

K. Thakur
23/09/2019
Officer on Special Duty (MC&P)
CCO/Kol

CENTRAL COALFIELDS LIMITED
DARBHANGA HOUSE: RANCHI

**Sub: Forwarding Minutes of the 480th (No. 12 of 2019)
Meeting of the Board of Directors held on 16.11.2019.**

Extract from the final confirmed minutes of the above meeting, in respect of following item, is appended below:

Item No. 480.3(4): Proposal seeking approval of Corporate Environment Policy for Central Coalfields Limited, based on the Corporate Environment Policy (CEP) 2018 of Coal India Limited.

The Board was apprised of the subject proposal seeking approval of Corporate Environment Policy for Central Coalfields Limited, based on the Corporate Environment Policy (CEP) 2018 of Coal India Limited.

It was further apprised that based upon the observation of CAG in its Draft Performance Audit Report on "Assessment of Environmental Impact due to Mining activities and its mitigation in Coal India Limited and its subsidiaries", CIL had reviewed its Corporate Environment Policy in 2018 and the same had been approved in the 377th CIL Board Meeting held on 20th December 2018. Also, as per the directions of 2nd Apex Committee meeting dtd: 18.10.2019 presided by Additional Secretary, Ministry of Coal, the Environment Policy-2018 of CIL also needs be approved by CCL Board.

After detailed deliberations, the Board approved the subject proposal as brought out in the agenda note.

Submitted for immediate necessary action to ensure compliances of the directives of the Board. ATR, may please be submitted within 08 days, so that it can be placed before the Board at least 07 days in advance of the next Board Meeting.

HOD(E&F)

D(T/P&P)

No. CS/BM/480/2019/ 410


Company Secretary

Date: 10-12-2019



COAL INDIA LIMITED



CORPORATE ENVIRONMENT POLICY

2018

Environmental Policy Statement:

Coal India Limited(CIL) is committed to promote sustainable development by protecting the environment through integrated project planning & design, prevention / mitigation of pollution, conservation of natural resources, restoration of ecology & biodiversity, recycling/ proper disposal of wastes, addressing climate change and inclusive growth. It also aims to bringing awareness amongst its stakeholders for continual improvement in environmental performances following best practices.

OBJECTIVES:

Coal India Limited shall endeavor to:

- 1. Plan & design projects with due consideration to environmental concerns for Sustainable Development.*
- 2. Conduct mining and associated operation in an environmentally responsible manner to comply with applicable laws and other requirements related to environmental aspects.*
- 3. Prevent pollution of surrounding habitation by continuous monitoring and adopting suitable measures for environment protection.*
- 4. Implement Environment Management Plans in all our mines /projects effectively to mitigate pollution, conservation of natural resources and restoration of ecology & biodiversity.*
- 5. Ensure compliance of all applicable Environmental Clearance & Forestry Clearance conditions and other statutory conditions issued by regulatory agencies.*
- 6. Recycling of wastes on the principle of REDUCE, REUSE and RECYCLE.*
- 7. Put special thrusts on efficient energy utilization / renewable energy as a measure to reduce carbon foot-print.*
- 8. Strive for continual improvement in our environmental performances by setting targets, measuring progress and taking corrective action.*
- 9. Taking measures to render productive post mining land use.*
- 10. Implementation of activities applicable to CIL arising out of International Conventions.*
- 11. Create environmental awareness among the employees and the local communities through pro-active communication and training.*

STRATEGIES FOR IMPLEMENTATION OF ENVIRONMENTAL POLICY:

Back Ground:

Coal India Limited subscribes to the view of Sustainable Development. Unless the environment can sustain all the developmental activities, any pursuit of development in isolation can cause irreparable damage to the ecosystem and associated environmental attributes. Keeping this view in mind, Coal India Limited attaches top priority towards sustainable development and approved its 'Corporate Environmental Policy' in December 1995, which was subsequently revised in 2012. However the present policy is the amendment of the 2012 Policy and is complimentary to the National Environmental Policy, 2006.

This modification in the present policy is the outcome of the experience gained since 2012 keeping in view the modifications / amendments made time to time in environmental policies and additional stipulation notified by MoEF&CC (Ministry of Environment, Forest& Climate Change) and other organisations concerning mine closure, reclamation of degraded land, environmental clearance etc. and also with the objective of revisiting the corporate policy.

This Policy has a vision of Green Mining and mission of 100% compliance of environmental statutes applicable to coal mining industry.

Strategies: Coal India adopts the strategies appended below for effective implementation:

1. MINE/ PROJECT PLANNING & DESIGN FOR SUSTAINABLE DEVELOPMENT:

- a) Coal being a non-renewal energy source, extraction shall be planned prudently to meet national requirement in a planned way. The projects shall be designed on the principle of Sustainable Development with due consideration to environment, mine closure ,safety and aspirations of the stakeholders at the planning& design stage itself with due regard to mine closer plan.
- b) While preparing the Mining plan/project reports, the effort shall be to incorporate latest mining technologies and equipment's with optimal capacity, which are more environment friendly.

- c) All Mining Plan/ project reports will be provided with detailed provisions for ensuring environmental compliances.

2. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) & ENVIRONMENT MANAGEMENT PLAN (EMP)

- a. All mine planning and design shall be environmentally acceptable and operation shall be carried out in such a way as to facilitate the compliance of stipulated environmental standards.
- b. EIA& EMP for all projects shall be formulated as per the approved ToR (Terms of Reference) and public consultations for obtaining Environmental Clearance (EC) from MoEF&CC. Similarly, in the existing projects needing enhancement of production capacities with or without increase in land, change of technology, renewal of lease and change in land use etc. fresh EC is required to be sought as per norms. The projects shall be operated after obtaining Consent to Establish (CTE)/Consent to Operate (CTO) from State Pollution Control Boards (SPCB).
- c. Detailed Mine Closure Plans shall be prepared for all existing and new mines as per the MoC (Ministry of Coal) guidelines.

3. COMPLIANCE OF THE STATUTORY REQUIREMENTS:

The implementation of EMP and fulfillment of all other statutory requirements like conditions of EC, FC and consents to establish & operate, including timely submission of returns to statutory bodies and various agencies, are to be ensured at all levels.

4. MEASURES TO MITIGATE POLLUTION:

a) Air Pollution:

- i) Generation of dust is to be controlled at the source to the possible extent with necessary control measures during drilling, blasting, loading, unloading, CHP transfer points etc.
- ii) Deployment of eco-friendly mining technologies.
- iii) Dust generation is to be minimized along coal / waste transportation routes.
- iv) Mechanized transportation of coal to be encouraged.
- v) Green belt is to be created around the source of dust.

b) Water pollution:

- i) The mine water and other effluent shall be treated to ensure the discharge norms as per statute. The treated effluent shall be utilized to the extent possible with a view to achieve maximum water conservation.
- ii) Oil & grease from the effluent shall be removed by Oil & Grease Traps for proper disposal.

c) Noise / ground vibration:

- i) All measures to minimize noise pollution will be taken including maintenance of HEMM, equipment and provision of PPE where required.
- ii) Suitable controlled blasting techniques shall be followed to reduce ground vibration as well as noise pollution.

d) Land reclamation:

- i) Progressive and concurrent reclamation of mined out areas will be carried out as per approved EIA/EMP and Mine Closure Plan (MCP).
- ii) Slopes of external dumps are the important area to be suitably graded / terraced for effective reclamation and plantation.
- iii) Preservation of top soil is required for future use. Old as well as existing non-active dumps are to be technically and biologically reclaimed.
- iv) Monitoring of reclamation work of all opencast mines will be done through Satellite Surveillance. The outcome shall be put in the websites.

e) Mine closure plans:

Mine Closure Plan (MCP) shall be prepared for each mine. MCP are being delineated in two phases viz. progressive and final mine closure. Appropriate funds are set aside and deposited under a special Escrow fund every year as per MoC guidelines, to be utilized for proper and final mine closure.

For mines closed prior to issuance of MoC guidelines (i.e. 27th August, 2009) suitable action to be taken as per provisions of Mines Act 1952.

f) Mine fire

CIL shall endeavour to reduce occurrence of mine fire and subsidence due to mining activity. Monthly report shall be submitted to top management of the subsidiary and CIL and Quarterly to company board. Action Plan for mine fire control shall be implemented. Monitoring will be done through Satellite Surveillance/other suitable technology.

g) Monitoring:

- I. All receptors in and around the mining projects shall be monitored regularly to assess the efficacy of the pollution control / mitigation measures within stipulated standards.
- II. Effect of mining on the hydrology of the area will be monitored through measurement of water level and its quality of nearby wells and bore holes provided for this purpose. Conservation of water through rainwater harvesting shall be taken up.
- III. Area and Unit environmental cells shall have regular interaction with the people in and around the coal mines and other allied units on matters related to environment to take necessary and timely corrective actions.
- V. Environmental initiatives and monitoring through self and third party environment audit shall be conducted for generating useful data for taking corrective actions and mitigation measures as per guidelines.

h) Other measures:

- I. Special emphasis shall be given to undertake R&D related to various facets of coal mine environmental management in collaboration with Central Mine Planning and Design Institute (CMPDI) and other competent institutions.
- II. Besides ensuring statutory compliance, the CIL desires to set high standards and continual improvement.
- III. A number of mines and establishments of CIL are ISO 14001 certified and balance mines & establishments shall be ISO 14001 certified in phased manner.
- IV. CSR and R&R policies of CIL are to be incorporated for better planning and implementation of the socio-economic issues of coal mining areas.
- V. The coal mining environmental issues are complex and require multi-disciplinary approach to address the same. CIL will endeavor to enter into MoUs with expert agencies of repute to assist in environment issues and also help in capacity building of CIL executives.
- VI. CIL conduct periodical medical examination (PME) of its work force on routine basis in compliance of the requirement mining rules and regulation, additional test will be done as and when require.

5. PRESERVATION OF BIO-DIVERSITY:

- a) This will start from mine planning including technically and biologically reclamation of mined out areas in collaboration with State Forest Departments, Wild Life Divisions, NGOs etc. working in the fields of bio-diversity conservation.

- b) The selection of species for plantation shall be done in consultation with the local community to include the local species and their preferences, if any.

6. COAL BENEFICIATION / COAL WASHERIES:

- a) For beneficiation of Runoff Mines (ROM) coal, washeries are being set up in a phased manner as per requirement and statutes.
- b) Slurry Management System (SMS) in all washeries shall be organized to ensure collection of fines, gainful utilization of rejects viz. power generation in Fluidized Bed Combustion (FBC) plants, selling to brick manufacturers or adopting other environmental friendly disposal options as feasible.
- c) The reject dumps and tailings shall be suitably handled to avoid any contamination.
- d) The effluent from washeries including tailings pond shall be suitably treated and reused to minimize water consumption with zero discharge concept.

7. CONSERVATION AND CLEAN TECHNOLOGY:

- a) R&D projects shall be taken up to promote clean coal technology and improve the existing technologies.
- b) Energy saved is energy produced. Voluntary energy audit to be done for corrective action to reduce carbon footprint.
- c) Clean Development Mechanisms will be explored for reducing emission of Green House Gases by exploration, identification, preparation of projects reports for extraction of methane from Coal Bed, Coal Mine, Abandoned Mine, Ventilation Air, UG Coal Gasification, generation and utilization of renewable energy etc.

8. AWARENESS PROGRAMME:

- a) Publicity to generate awareness through exchange & communication of information, newsletters and periodicals on environment, seminars, workshops, celebration of World Environment Day etc. at CIL / Subsidiary HQs, Areas & units to be undertaken. Regular training programs to be organized at various levels to inculcate awareness among employees.
- b) Courses on environmental and forestry laws and Environmental Protection Measures and the Corporate Policy to be organized for project executives for improving knowledge.
- c) CIL to give annual awards for achieving excellence in environment related

issues and activities. These awards will be in recognition for implementation of EMP, land reclamation and compliance of statutes, proper maintenance of air & water quality and noise level.

9. WASTE MANAGEMENT:

CIL will undertake appropriate action for safe handling, storage and disposal of solid waste and hazardous waste generated from its industrial set up and colonies as per relevant rules. The biomedical waste generated from hospitals and dispensaries will be collected and disposed in appropriate facilities created as per statutes. E-waste management and handling of various types of e-waste generated in its operations will be done as per rule.

10. CORPORATE ENVIRONMENT RESPONSIBILITY:

Corporate Environment Responsibility (CER) is mandatory for issuing environmental clearance for all the Greenfield and Brownfield projects as per directives of MoEFCC with effect from 1st May, 2018 (O.M.No.22-65/2017-IAIII dt. 19.06.2018). Budgetary provisions should be kept for implementation of provisions of CER for all the projects which will be submitted to MoEFCC for grant of environmental clearance.

11. INCORPORATION OF VIEWS OF STAKEHOLDERS:

CIL will critically examine and incorporate the viewpoints of various stakeholders like PAPs/PAFs, Parliamentary Committees, Standing Sub-Committees, NGOs etc. CIL being a listed entity with stock exchange, it will also take into consideration the observations/viewpoints of international investors.

12. IMPLEMENTATION OF POLICY:

- i) **Manpower:** CIL shall have environmental divisions at decision making & operational levels in its structure. The environment department shall be set up and strengthened at:
 - i) CIL Corporate HQ at Kolkata
 - ii) Subsidiary HQs
 - iii) Areas / Units / Collieries / Workshops /Washeries
 - iv) CMPDI (HQ) & CMPDI Regional Institutes
- ii) **Roles and Responsibilities:** The environmental department, set up at company HQs, Areas and Unit levels with appropriate manpower and resources, shall be responsible for implementation of policy, obtaining EC, FC, consent to establish

& operate, statutes requirements and undertaking mitigation measures besides preparation of action plan every year and also to intimate the status of implementation to the management regularly.

iii) Annual Environment Budget (Revenue & Capital): The Annual Environment Budget (revenue & capital) shall be prepared based on the action plan including monitoring of various bench marks and the budget utilization. The year wise funds earmarked for environmental protection measures shall be kept in separate accounts with Environmental cost code.

13. FLEXIBILITY TO THE SUBSIDIARY COMPANIES:

CEP 2018 will be applicable for all subsidiaries of CIL. The subsidiary company Boards have been authorized to approve necessary modifications in CEP 2018 with reference to unique conditions prevailing at the concerned subsidiary.

REVIEW OF ENVIRONMENTAL POLICY:

In view of the present fast changing social, economic and environmental scenario, this Policy shall be reviewed every 5 years to incorporate the changes in the legal, technical, environmental, economic and social inputs prevailing at that time. Whenever, there is change in National Environmental Policy or other National / State relevant policies, Acts etc, this Corporate Environmental Policy would be reviewed and suitably revised.

सेन्ट्रल कोलफिल्ड्स लिमिटेड
कोलफिल्ड्स लिमिटेड की एक सहायक कम्पनी)

C.C.L.

Website: <http://ccl.cmpdi.co.in>
Office of the Colliery Manager
K.D.Hesalong Project
P.O. KDH, Dist. Ranchi, (Jharkhand)
E-mail ID: projectofficeKD.H@yahoo.com

Ref: PO/KDH/O.O/19-20/120

DATED: 15.12.2019

OFFICE ORDER

As per the directive of CCL HQ, Ranchi a Pit Environmental Committee in respect of K.D.H OCP Project is hereby constituted consisting of following officials.

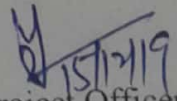
1. Project officer, K.D.H Project/ Chairman of the PEC
2. Colliery Manager, K.D.H OCP
3. Project Engineer (Excv), K.D.H
4. Project Engineer (E&M), K.D.H
5. Project Engineer (Civil) , K.D.H
6. Unit Nodal Officer, (E&F), K.D.HOCP
7. Safety officer, K.D.HOCP
8. Sr. Surveyor (M) K.D.HOCP

Special Invitees:

1. Staff Officer (P&P), NLK Area
2. Area Nodal Officer (Evt. & Forest), NK Area

The above committee will meet every Friday at the Office of the Project Officer K.D.HOCP at 4.30 PM to discuss compliances of various statutory provisions related to environment such as EC, FC, CTO hazardous waste and other issues.

This issues with the consent of competent authority.


Project Officer
K.D.H Project

Copy to"

1. The General Manager, NK
2. HOD, (E&F), CCL, Ranchi

Distribution:

1. All Committee members
2. All Special Invitees

Ref: KDH/PO/Env./15-16/ 256
Dated: 21/2/15

To
The Mukhiya
Bishrampur Panchayat
Khalari, Ranchi

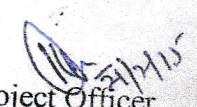
Sub: Environmental clearance for KDH Extension OCP Project of (Normative 4.5 MT PA to peak 5.00 MTPA) CCL located at village Bishrampur, Ranchi, Jharkhand

Dear Madam,

Please find enclosed herewith a copy of the environmental clearance of KDH extension project Normative capacity 4.5 MTPA to 5.00 MTPA (Peak) which has been received from Ministry of Environment, Forest & Climate, IA-II (Coal Mining) Division, Govt. of India vide letter no. J-11015/311/2010-IA-II (M) dated 30.01.2015.

This is for your kind information.

Yours faithfully,


Project Officer
KDH Project

Encl. As above
Copy to:

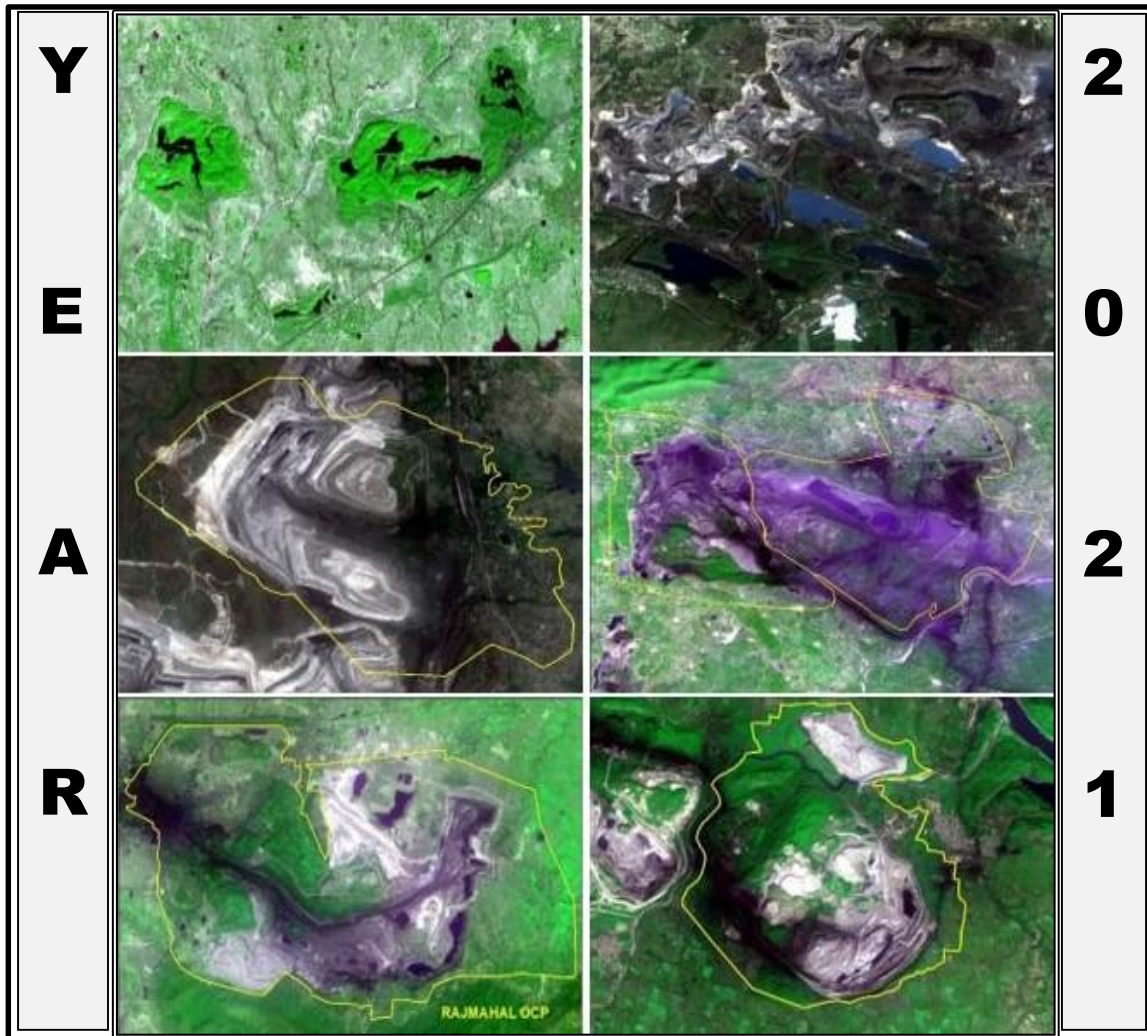
1. Staff Officer (P&P), NK

Copy for kind information to the

1. General Manager (NK)

AS
निमला उराव
o/c

Land Restoration / Reclamation Monitoring of 76 Opencast Coal Mines Projects of CIL producing more than 5 mcm (Coal+OB) annually based on Satellite Data for the Year 2021



cmpdi
A Mini-Ratna Company

**Land Restoration / Reclamation Monitoring of 76 Opencast
Coal Mines Projects of CIL producing more than 5 mcm
(Coal+OB) annually based on Satellite Data for the Year
2021**

March- 2022



**Remote Sensing Cell
Geomatics Division
CMPDI, Ranchi**

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Executive Summary

- 1.0 Project** Land restoration / reclamation monitoring of 76 opencast coal mines in different subsidiaries of Coal India Ltd. (CIL) producing 5 million cu.m. and more (Coal+OB) per year based on satellite data of year 2021 on annual basis.
- 2.0 Objective** Objective of the land restoration / reclamation monitoring is to assess the area under backfilling, plantation, social forestry, active mining area, water bodies, distribution of wasteland, agricultural land and forest in the leasehold area of the projects. This will help in assessing the progressive status of mined land reclamation and to take up remedial measures, if any, required for environmental protection.
- 3.0 Salient Findings**
- In the year 2021, amongst projects of different subsidiaries of Coal India Ltd. taken up for monitoring, WCL has included 4 more mines. CCL has included 8 more mines, SECL has included more 11 mines and MCL has included 2 more mine for monitoring from this year as per directive received from CIL. Some of these additional mines were previously monitored under Less than 5 mcm (Coal+OB) Category and some mines are new additions Hence, total of 76 mines were selected for monitoring this year instead of 51 mines that were monitored in the year 2020.
 - Out of the total mine leasehold area of 863.83 Km² of the 76 OC projects considered for monitoring during 2021-22; total excavated area is 302.65 Km²; out of which 136.23 Km² area (45.01%) is under backfilling (Technical Reclamation), 53.02 Km² area (17.52%) has been planted (Biologically Reclaimed) and 113.40 Km² area (37.47%) is under active mining. It is evident from the analysis that 189.25 Km² (62.53%) area out of the total excavated area of 302.65 Km² of the 76 OC projects is already under reclamation and balance 113.40 Km² (37.47%) area is under active mining. Company wise details are given in Table - 1 & Fig-1.
 - On comparing the status of land reclamation carried out in year 2020-21 with respect to years 2021-22 in the 76 Opencast projects of different CIL subsidiaries, it is evident from the analysis of the satellite data of the year 2021 that area under land reclamation has increased from 173.95 Km² (Yr. 2020-21) to

189.25 Km² (Yr. 2021-22), which includes both area under plantation (Biological Reclamation) and areas under backfilling (Technical Reclamation). This increase of 15.30 Km² area of land reclamation in last one year is the result of the efforts made by CIL's subsidiary companies towards land reclamation. Year wise comparison in land reclamation in different subsidiaries is given in Fig.2.

- It has been observed that in all the subsidiaries of Coal India Limited (CIL), technical reclamation has shown an increasing trend. As compared to the analysis done in the year 2020, it has been found that there has been an overall increase of 12.91 Km² in area under technical reclamation commutatively in the year 2021.
- It has been observed that in WCL, SECL, NCL, CCL & ECL area under biological reclamation has increased in comparison to previous year whereas in MCL area under biological reclamation has reduced marginally in the leasehold areas of the opencast projects selected for this study (Refer Table-1).
- It has been also observed that in subsidiaries like WCL, SECL, MCL, CCL & ECL, total area under plantation (Green Cover) which includes plantation over backfill, plantation over overburden dumps and plantation done under social forestry etc. has increased as compared to previous year. However, in NCL, there has been marginal decrease in area under green cover due to additional dump on vegetated area in Jhingurdah project. In NCL, leasehold boundaries of all the projects taken up of monitoring are updated with latest available EC boundaries which has resulted change in position and area of the projects impacting area under plantation and vegetation. Overall 18.09% of the total leasehold area of all the subsidiaries of CIL commutatively is under Green Cover as per the analysis of satellite data of the year 2021.
- Analysis of the results based on satellite data of the year 2021 also indicate that all subsidiaries of CIL, whose projects were under monitoring indicate an increasing trend for area under reclamation. It has been observed that total area under reclamation has increased from 173.95 Km² (62.16%) in 2020 to 189.25 Km² (62.53%) in the year 2021.

Commutative Status of Land Reclamation monitoring based on satellite data of the year 2021 is indicated in the Pie Chart in the

Fig. 1. Subsidiary wise status of Land Reclamation Monitoring of the projects monitored based on satellite data of the year 2021 is shown in form of Bar Chart at Fig 2. Comparison of Area under Reclamation in different subsidiaries of Coal India Limited between the years 2020 to 2021 has been shown in form of Bar-Chart in Fig 3.

CENTRAL COALFIELDS LIMITED

9.0 Land Reclamation Status in Central Coalfields Ltd.

9.1 The following 15 OC projects of Central Coalfields Ltd. producing more than 5 million m³. (Coal + OB) annually, have been taken up for land reclamation monitoring based on Satellite data of the year 2021.

No.	Name of OC Project	Coalfield Name
1	Ashok	North Karanpura (NK)
2	Piparwar	
3	KDH	
4	Amrapali	
5	Magadh	
6	Rohini *	
7	Purnadih *	
8	North Urimari *	South Karanpura (SK)
9	Rajrappa	Ramgarh
10	Parej East	West Bokaro (WB)
11	Tapin North *	
12	Kathara *	East Bokaro (EB)
13	Karo *	
14	Konar Expansion *	
15	Selected Dhorri *	

*Yearly monitoring started from (2021-22)

9.2 Area statistics of different land use/ cover classes present in the leasehold area of the above 15 projects of CCL for the year 2021 are shown in Table 9.1. Land use/ cover maps derived from satellite data are shown in Plate 9.1 – 9.15. Report on land reclamation status of the above projects are also prepared. Year wise changes in different land use/ cover classes in the last three years (wherever applicable) based on satellite data are shown in Bar charts in Fig. 9.2 – 9.16.

- 9.3** Study based on Satellite data of the year 2021 reveals that, out of total excavated area of 36.49 km², 25.99 km² (71.22%) has come under reclamation in the above 15 OC projects of CCL, out of which 18.01 km² (49.36%) area is under backfilling (Technical Reclamation) and 7.98 km² (21.87%) area is under plantation (Biological Reclamation).
- 9.4** Study also reveals that the area under backfilling (Technical Reclamation) has increased from 15.20 km² in 2020 to 18.01 km² in 2021.
- 9.5** Analysis of satellite data also indicates that the area under plantation (Biological Reclamation) has increased from 7.00 km² (Yr. 2020) to 7.98 km² (Yr. 2021). This increase in Biological Reclamation reflects continuous efforts on part of CCL in continuing reclamation activities for environmental protection.
- 9.6** The total area under reclamation has increased from 22.20 km² (69.05%) in 2020 to 25.99 km² (71.22%) in 2021, out of the total excavated area.
- 9.7** It is also seen that the total area under plantation (**Green Cover**) which includes plantation carried out on backfilled area, OB dumps as well as plantation done on social forestry in all the 15 mines taken together of CCL has increased from 17.32 km² in the year 2020, to 17.71 km² in the year 2021
- 9.8** Piparwar area of CCL has developed and maintained an eco-restoration park called “**Kayakalp Vatika**” at Piparwar OCP, over the reclaimed (backfilled) land. Nearby, a new eco park named ‘**Chandra Shekhar Azad Vatika**’ is also being developed from 2020.
- 9.10** Out of 15 projects of CCL taken for land reclamation monitoring in 2021-22, **Parej East** OC ranks on top for land reclamation (86.98%) followed by **KDH** (85.60%), **Piparwar** OC (82.73%), **Ashok** OC (82.14%), and **Rajrappa** OC (79.61%).
- 9.11** Eight (8) OC projects namely, Purnadih, Rohini, North Urimari, Tapin North, Kathara, Karo, Konar Expansion and Selected Dhori were added to the list of yearly reclamation

monitoring from the year 2021-22. Earlier these projects were monitored in every three year basis.

- 9.12** Amrapali OCP has successfully carried out plantation on OB dumps, and slopes of OB dump through seed ball throwing.

TABLE – 9.1
Project wise Land Reclamation Status in OC projects of CCL based on Satellite Data of the Year 2021

(Projects producing more than 5 mcm of Coal + OB annually)

(Area in Sq. Kms.)

Sl. No.	Project	Total Mine Leasehold Area		Technical Reclamation	Plantation						Area under Active Mining	Total Excavated Area		Total Area under Plantation (% Green Cover Generated in Leasehold)		Total Area under Reclamation			
					Biological Reclamation		Other Plantations												
				Area under Backfilling		Plantation on Excavated / Backfilled Area		Plantation on External Over Burden		Social Forestry, Avanie, Plantation Etc.				9 (=4+5+8)		10 (=5+6+7)		11(=4+5)	
1	2	3		4		5		6		7		8		9 (=4+5+8)		10 (=5+6+7)		11(=4+5)	
		2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
1	Ashok	7.93	7.93	2.35	2.47	1.02	1.21	0.00	0.00	0.27	0.17	0.66	0.80	4.03	4.48	1.29	1.38	3.37	3.68
				58.31%	55.13%	25.31%	27.01%					16.38%	17.86%			16.27%	17.40%	83.62%	82.14%
2	Piparwar	11.20	11.20	2.91	2.75	1.45	1.85	0.42	0.19	1.18	1.18	0.98	0.96	5.34	5.56	3.05	3.22	4.36	4.60
				54.49%	49.46%	27.15%	33.27%					18.35%	17.27%			27.23%	28.75%	81.65%	82.73%
3	KDH	6.20	6.20	1.79	1.74	1.32	1.35	0.03	0.03	0.21	0.21	0.49	0.52	3.60	3.61	1.56	1.59	3.11	3.09
				49.72%	48.20%	36.67%	37.40%					13.61%	14.40%			25.16%	25.65%	86.39%	85.60%
4	Amrapali	6.20	6.20	1.20	1.32	0.00	0.00	0.05	0.08	0.02	0.02	1.07	1.10	2.27	2.42	0.07	0.10	1.20	1.32
				52.86%	54.55%	0.00%	0.00%					47.14%	45.45%			1.13%	1.61%	52.86%	54.55%
5	Magadh	17.69	17.69	0.55	0.60	0.00	0.00	0.10	0.10	0.00	0.00	0.78	0.92	1.33	1.52	0.10	0.10	0.55	0.60
				41.35%	39.47%	0.00%	0.00%					58.65%	60.53%			0.57%	0.57%	41.35%	39.47%
6	Parej East	6.20	6.20	0.72	0.75	0.69	0.72	0.05	0.05	0.09	0.09	0.22	0.22	1.63	1.69	0.83	0.86	1.41	1.47
				44.17%	44.38%	42.33%	42.60%					13.50%	13.02%			13.39%	13.87%	86.50%	86.98%
7	Rajrapa	19.82	19.82	2.37	2.40	1.3	1.27	3.02	3.02	2.02	2.02	0.80	0.94	4.47	4.61	6.34	6.31	3.67	3.67
				53.02%	52.06%	29.08%	27.55%					17.90%	20.39%			31.99%	31.84%	82.10%	79.61%
8	Rohini	2.58	2.56	1.22	1.27	0.42	0.48	0.01	0.11	0.00	0.00	0.67	0.48	2.31	2.23	0.43	0.59	1.64	1.75
				52.81%	56.95%	18.18%	21.52%					29.00%	21.52%			16.67%	23.05%	71.00%	78.48%
9	Purnadih	7.56	7.52	0.41	0.92	0.09	0.19	0.03	0.12	0.00	0.03	0.95	0.52	1.45	1.63	0.12	0.34	0.50	1.11
				28.28%	56.44%	6.21%	11.66%					65.52%	31.90%			1.59%	4.52%	34.48%	68.10%
10	North Urimari	6.68	5.17	0.50	0.25	0.16	0.14	0.01	0.07	0.00	0.00	1.32	1.00	1.98	1.39	0.17	0.21	0.66	0.39
				25.25%	17.99%	8.08%	10.07%					66.67%	71.94%			2.54%	4.06%	33.33%	28.06%
11	Tapin North		3.04		0.91		0.00		0.12		0.00		0.66		1.57		0.12		0.91
					57.96%		0.00%						42.04%				3.95%		57.96%
12	Kathara	7.93	7.71	0.61	0.65	0.32	0.33	1.04	0.96	0.89	0.83	0.77	0.62	1.70	1.60	2.25	2.12	0.93	0.98
				35.88%	40.63%	18.82%	20.63%					45.29%	38.75%			28.37%	27.50%	54.71%	61.25%
13	Karo	5.75	5.26	0.17	0.55	0.14	0.14	0.12	0.14	0.16	0.12	0.34	0.39	0.65	1.08	0.42	0.40	0.31	0.69
				26.15%	50.93%	21.54%	12.96%					52.31%	36.11%			7.30%	7.60%	47.69%	63.89%
14	Konar Exp.	7.29	4.71	0.09	0.88	0.03	0.30	0.24	0.01	0.19	0.01	0.41	0.85	0.53	2.03	0.46	0.32	0.12	1.18
				16.98%	43.35%	5.66%	14.78%					77.36%	41.87%			6.31%	6.79%	22.64%	58.13%
15	Sel Dhori	3.00	2.65	0.31	0.55	0.06	0.00	0.17	0.04	0.00	0.01	0.49	0.52	0.86	1.07	0.23	0.05	0.37	0.55
				36.05%	51.40%	6.98%	0.00%					56.98%	48.60%			7.67%	1.89%	43.02%	51.40%
	TOTAL	116.03	113.86	15.20	18.01	7.00	7.98	5.29	5.04	5.03	4.69	9.95	10.50	32.15	36.49	17.32	17.71	22.20	25.99
				47.28%	49.36%	21.77%	21.87%					30.95%	28.78%			14.93%	15.55%	69.05%	71.22%

(% is calculated with respected to Excavated Area as applicable)

Note:	<i>In reference of the above Table-9.1, different parameters are classified as follows:</i>
1	<i>Leasehold area as per the respective environmental clearance (EC) boundary</i>
2	<i>Yearly monitoring of Eight (8) more Projects namely, Rohini, Purnadih, North Urimari, Kathara, Tapin North, Konar, Karo & Sel Dhori started from current year (2021-22)</i>
3	<i>Area under Biological Reclamation includes Area under Plantation done on Backfilled area only</i>
4	<i>Area under Technical Reclamation includes Area under Backfilling only</i>
5	<i>Area under Active Mining includes Coal Quarry, Quarry filled with water & Advance Quarry Site, if any. Coal dump is excluded</i>
6	<i>Social Forestry and Plantation on External OB dumps are not included in Biological Reclamation, and are put under separate categories</i>
7	<i>(%) calculated in the above table is in respect of total excavated area only, except for "Total area under Plantation" where % is in terms of Leasehold Area.</i>

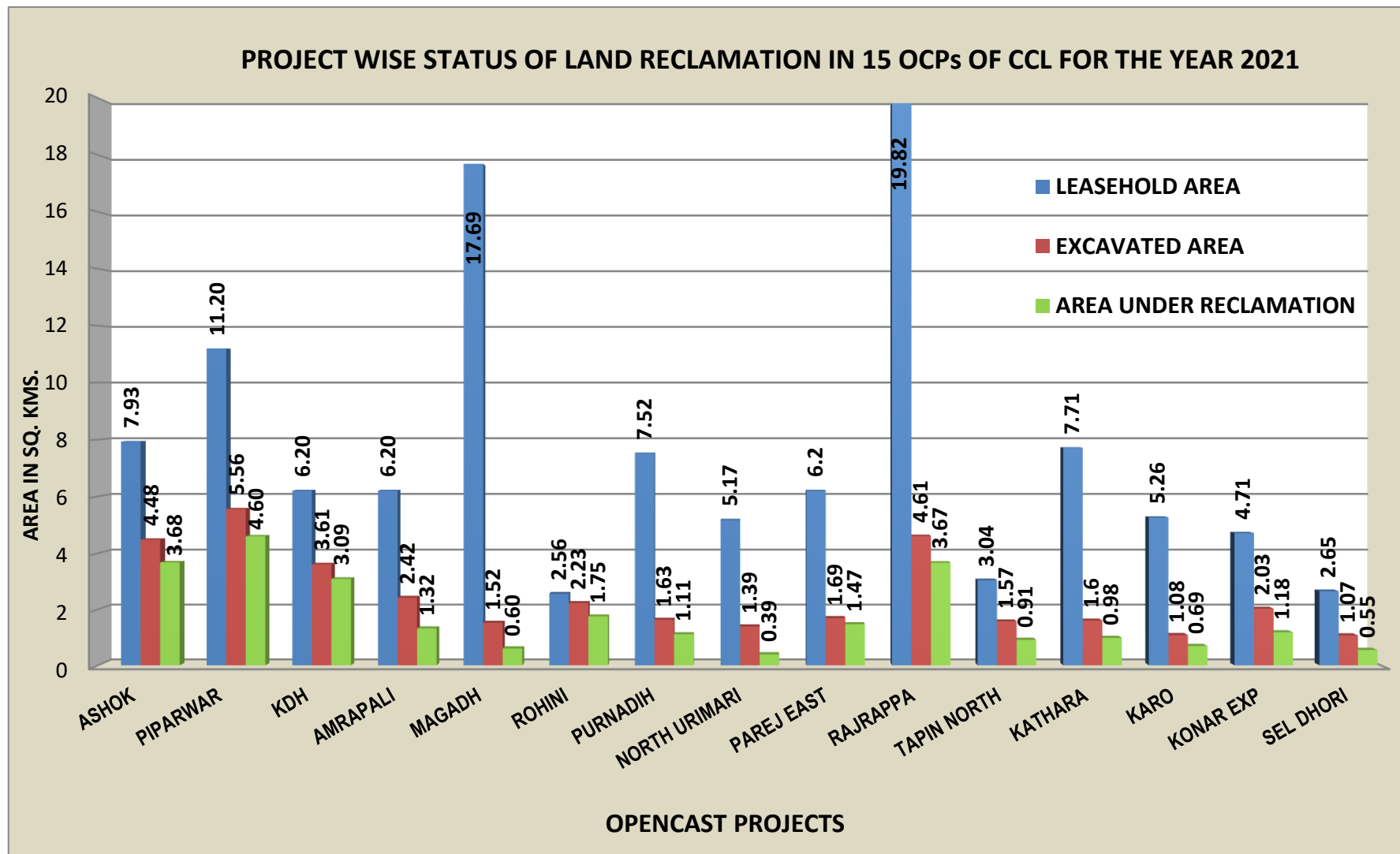


Fig. 9.1: Project wise Land Reclamation Status in Year 2021

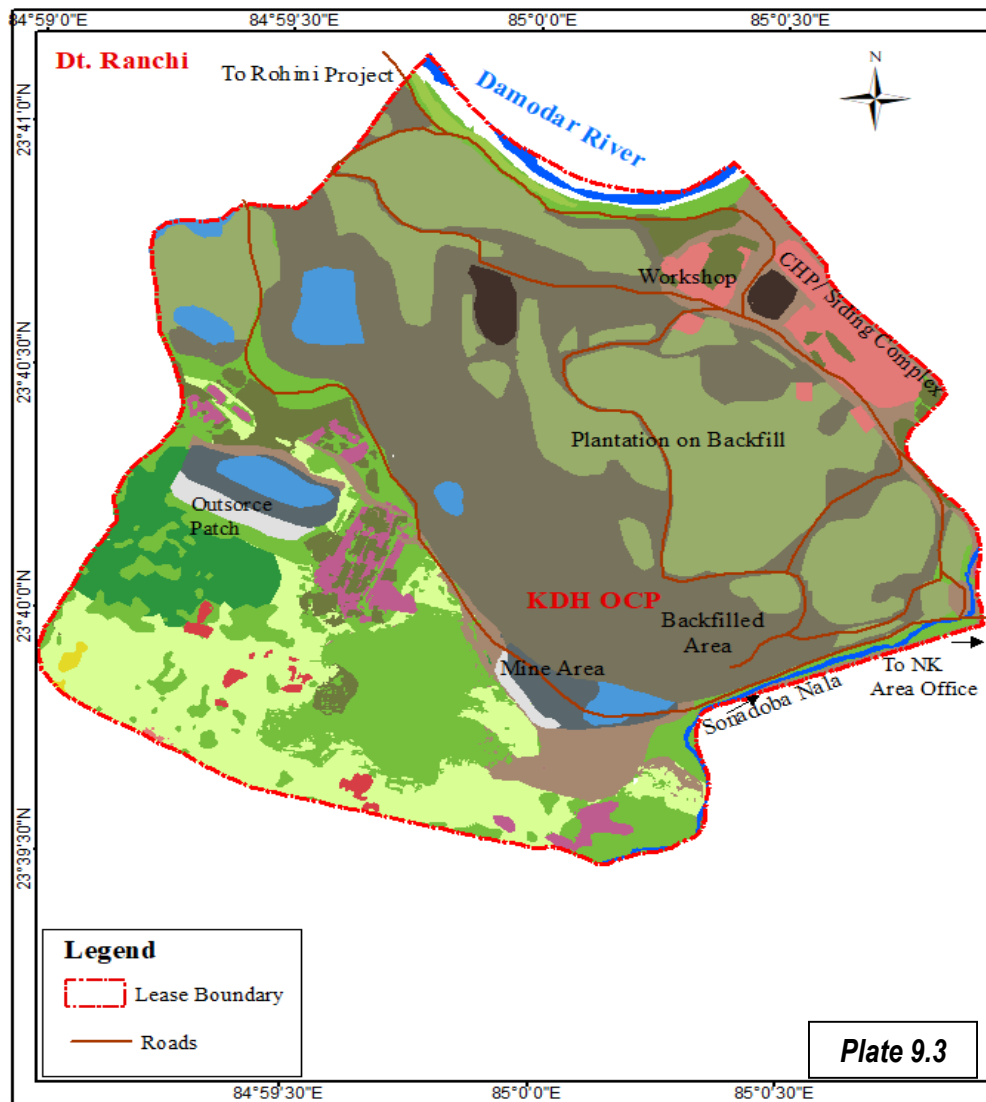
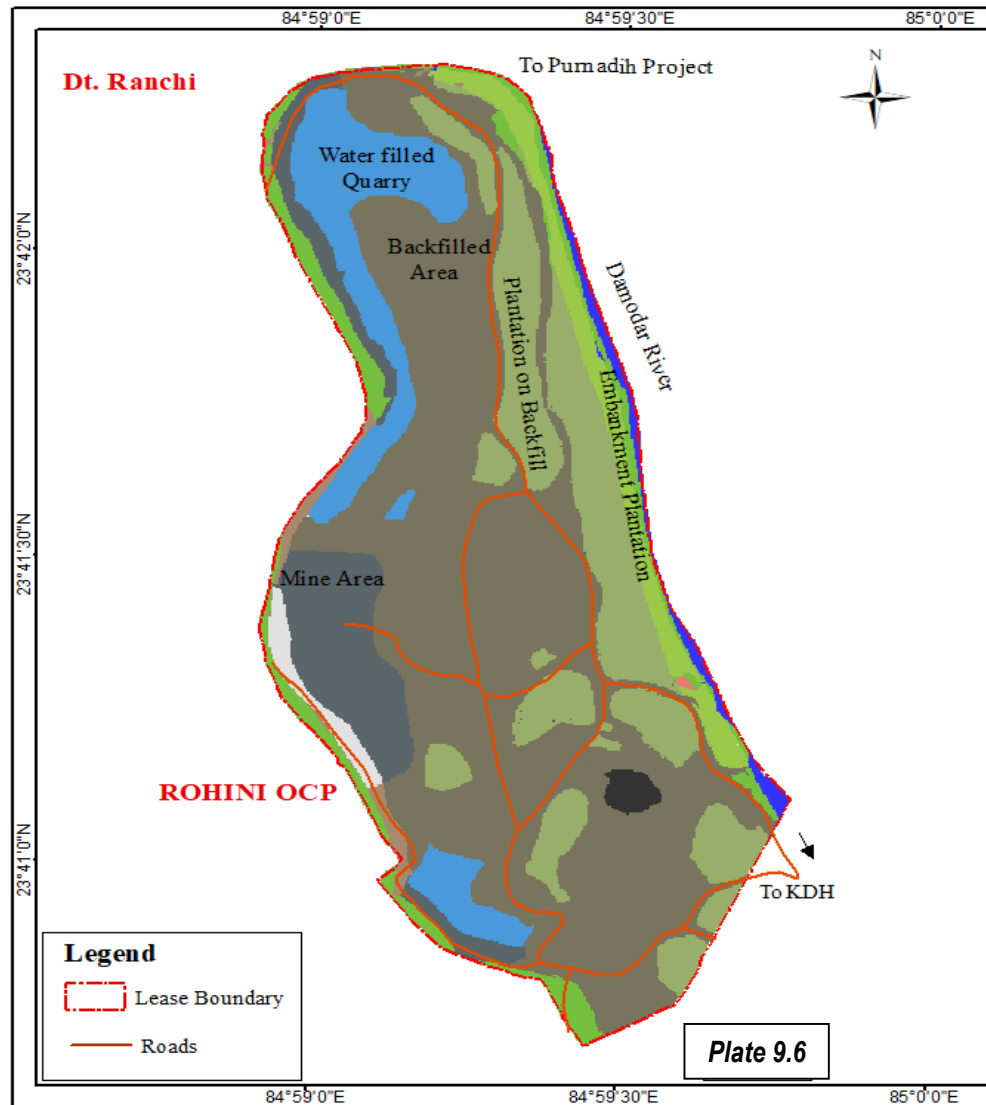


Plate 9.3

Area Statistics - KDH OCP (2021)			
Classes		Colour	Area
Level-I	Level-II		(Km ²) % of Total
Forest Area	Dense Forest		0.00 0.00
	Open Forest		0.20 3.23
	Total Forest Area		0.20 3.23
Scrubs	Scrubs		0.75 12.10
	Social Forestry		0.21 3.39
	Plantation on Backfill		1.35 21.77
Plantation	Plantation on OB Dump		0.03 0.48
	Total Plantation		1.59 25.65
	Total Vegetation Area		2.54 40.97
Agriculture	Crop Land		0.00 0.00
	Fallow Land		0.62 10.00
	Total Agriculture Area		0.62 10.00
Waste Land	Waste Land		0.28 4.52
	Sand Body		0.04 0.65
	Total Waste Land		0.32 5.16
Mining Area	Coal Quarry		0.16 2.58
	Barren OB Dump		0.03 0.48
	Area Under Backfilling		1.74 28.06
	Water Filled Quarry		0.30 4.84
	Coal Dump		0.05 0.81
	Advance Quarry Site		0.06 0.97
Total Mining Area		2.34 37.74	
Settlements	Rural Settlement		0.02 0.32
	Urban Settlement		0.11 1.77
	Industrial Settlement		0.18 2.90
Total Settlement Area		0.31 5.00	
Water Body	River, Ponds		0.07 1.13
Total			6.20 100.00

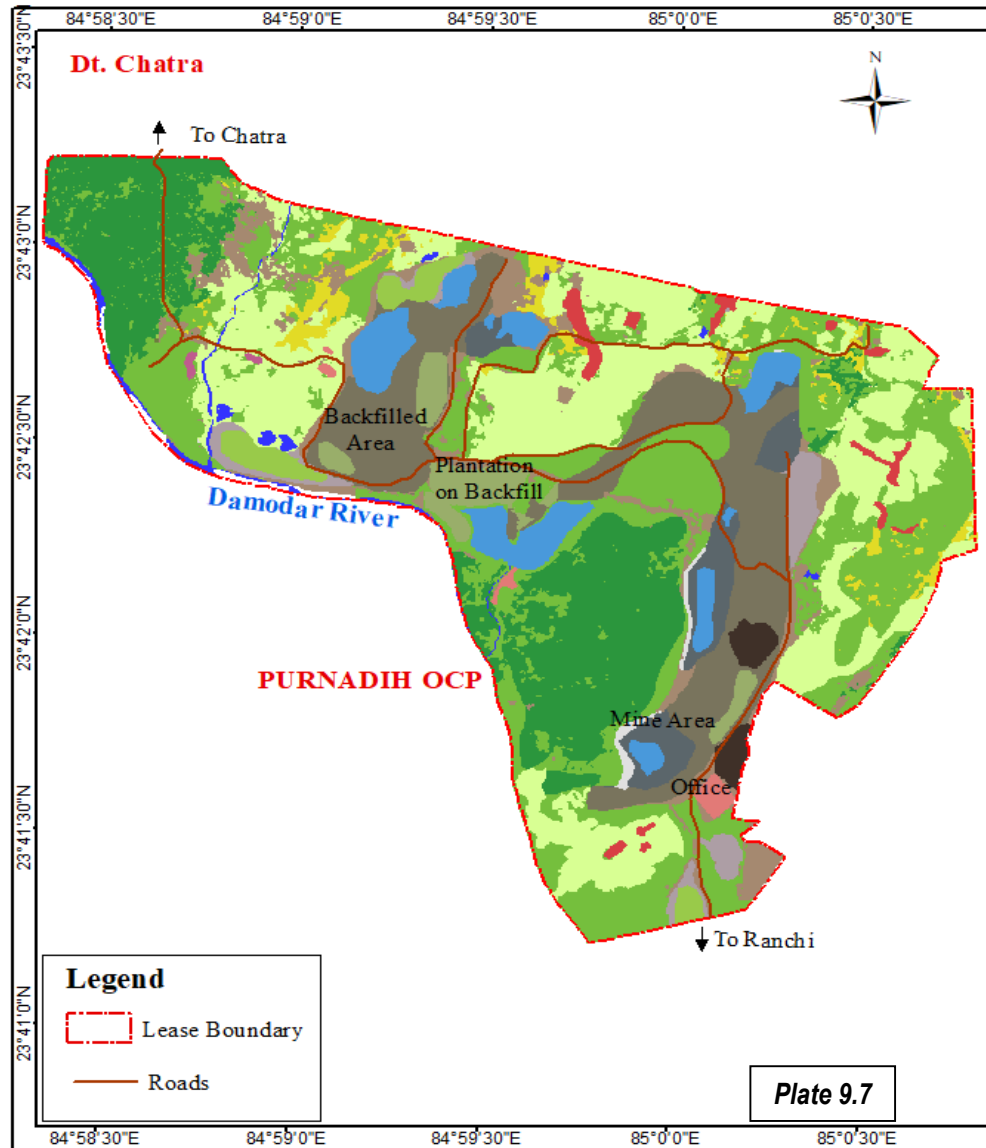
Customer		Central Coalfields Limited		
Title	Land Reclamation Monitoring of OC Projects			Job No. 561410027
Subject Land Reclamation Status of KDH OCP based on Satellite Data (RS-2/L-IV) of the year 2021	Activity	Name	Designation	Signature
	Prepared	Hariharalal B	Ch. Mgr(System)	<i>Hariharalal B</i>
	Checked	Tilak Mandal	Ch. Mgr(RSC)	<i>Tilak Mandal</i>
Approved	R. Kumar	GM(Geomatics)	<i>R. Kumar</i>	
Scale:	0 0.25 0.5 1 km			Sheet 1
DrgNo.	HQ REM 21 3 A4 03			Rev No.0



Area Statistics - Rohini OCP (2021)				
Classes		Colour	Area	
Level-I	Level-II		Area (Km ²)	% of Total
Forest Area	Dense Forest		0.00	0.00
	Open Forest		0.00	0.00
	Total Forest Area		0.00	0.00
Scrubs	Scrubs		0.11	4.30
	Social Forestry		0.00	0.00
Plantation	Plantation on Backfill		0.48	18.75
	Plantation on OB Dump		0.11	4.30
	Total Plantation		0.59	23.05
Total Vegetation Area			0.70	27.34
Agriculture	Crop Land		0.00	0.00
	Fallow Land		0.00	0.00
Total Agriculture Area			0.00	0.00
Waste Land	Waste Land		0.06	2.34
	Total Waste Land		0.06	2.34
Mining Area	Coal Quarry		0.22	8.59
	Barren OB Dump		0.00	0.00
	Area Under Backfilling		1.27	49.61
	Water Filled Quarry		0.24	9.38
	Coal Dump		0.01	0.39
	Advance Quarry Site		0.02	0.78
Total Mining Area			1.76	68.75
Settlements	Rural Settlement		0.00	0.00
	Urban Settlement		0.00	0.00
	Industrial Settlement		0.00	0.00
Total Settlement Area			0.00	0.00
Water Body	River, Ponds		0.04	1.56
Total			2.56	100.00

Customer		Central Coalfields Limited			
Title		Land Reclamation Monitoring of OC Projects			Job No. 561410027
Subject Land Reclamation Status of Rohini OCP based on Satellite Data (RS-2/L-IV) of the year 2021	Activity	Name	Designation	Signature	
	Prepared	Hariharalal B	Ch. Mgr(System)	<i>[Signature]</i>	
	Checked	Tilak Mandal	Ch. Mgr(RSC)	<i>[Signature]</i>	
Approved	R. Kumar	GM(Geomatics)	<i>[Signature]</i>		
Scale:		0 125 250 500 Meters			Sheet 1
Drg.No.		HQ REM 21 3 A4 06			Rev No.0





Area Statistics - Purnadih OCP (2021)				
Classes		Colour	Area	
Level-I	Level-II		Area (Km ²)	% of Total
Forest Area	Dense Forest		0.00	0.00
	Open Forest		1.15	15.29
Total Forest Area			1.15	15.29
Scrubs	Scrubs		2.03	26.99
Plantation	Social Forestry		0.03	0.40
	Plantation on Backfill		0.19	2.53
	Plantation on OB Dump		0.12	1.60
Total Plantation			0.34	4.52
Total Vegetation Area			3.52	46.81
Agriculture	Crop Land		0.19	2.53
	Fallow Land		1.51	20.08
Total Agriculture Area			1.70	22.61
Waste Land	Waste Land		0.42	5.59
	Total Waste Land			0.42
Mining Area	Coal Quarry		0.20	2.66
	Barren OB Dump		0.17	2.26
	Area Under Backfilling		0.92	12.23
	Water Filled Quarry		0.30	3.99
	Coal Dump		0.06	0.80
Total Mining Area			1.67	22.21
Settlements	Rural Settlement		0.09	1.20
	Urban Settlement		0.01	0.13
	Industrial Settlement		0.04	0.53
Total Settlement Area			0.14	1.86
Water Body	River, Ponds		0.07	0.93
Total			7.52	100.00

Customer		Central Coalfields Limited			
Title		Land Reclamation Monitoring of OC Projects			Job No. 561410027
Subject	Activity	Name	Designation	Signature	
Land Reclamation Status of Purnadih OCP based on Satellite Data (RS-2/L-IV) of the year 2021	Prepared	Hariharalal B	Ch. Mgr(System)		
	Checked	Tilak Mandal	Ch. Mgr(RSC)		
	Approved	R. Kumar	GM(Geomatics)		
Scale:					Sheet 1
Drg.No.		HQ REM 21 3 A4 07			Rev No.0



cmpdi
A Mini-Ratna Company

Central Mine Planning & Design Institute Ltd.

(A Subsidiary of Coal India Ltd.)

Gondwana Place, Kanke Road, Ranchi 834031, Jharkhand

Phone : (+91) 651 2230001, 2230002, 2230483, FAX (+91) 651 2231447, 2231851

Website : www.cmpdi.co.in, Email : cmpdihq@cmpdi.co.in


CD No - 164
9/5/23

CENTRAL Hospital information (History, facilities, staff, etc)

Details of IME/PME of last 5 years from the Area

NK AREA DAKRA

S. No.	Year	Man Power	Target	PME		Total	IME		Total
				Below 45 Yrs	Above 45 Yrs		CCL	Contractual	
1	2018		462	170	302	472	25	242	267
2	2019		664	203	313	516	50	276	326
3	2020		450	260	340	600	60	108	168
4	2021		853	455	414	869	47	246	293
5	2022		806	321	422	743	32	130	162


 9/5/23
 Dy. Chief Medical Officer.
 C.H., Dakra
 Ranchi (JH)

Disease report of last 5 years from the Area

NK AREA DAKRA

Area	Year	Total No of PME	Hypertension	Diabetics	Eye Problem	Hearing Impairment (Partial)	Back Problem	Spinal Injuri	CA D	Dyslipidemia	Respiratory Disease	Skin Disease Detected / Reacted	Cancer Detected / Reacted	Psychiatric	Obesity	Pneumoconiosis	Sleepinsomania	CVA / Paralysis
NK AREA	2018	490	27	59	03	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
"	2019	516	06	62	04	"	"	"	"	"	"	"	"	"	"	"	"	"
"	2020	600	30	53	08	"	"	"	"	"	"	"	"	"	"	"	"	"
"	2021	869	37	70	06	"	"	"	"	"	"	"	"	"	"	"	"	"
"	2022	743	37	62	17	"	"	"	"	NIL	Asthma 01	"	"	"	"	"	"	"


 9/5/23
 Dy. Chief Medical Officer,
 C.H., Dakra
 Ranchi (JH)

Vocational training Centre, NK Area

Sr. No.	Name of mine	Target						Contractual						Departmental					
		2017	2018	2019	2020	2021	2022	2017	2018	2019	2020	2021	2022	2017	2018	2019	2020	2021	2022
1	KDH	132	35	99	105	108	104	39	03	9	12			134	39	113	119	118	113
2	Dakra	64	60	65	78	73	67	17	11	10		7		81	69	82	83	90	77
3	Rohini	72	51	52	52	54	62	16	60	45	11	1		88	64	91	94	58	67
4	Purnadih	100	60	60	80	90	102	12	9	13		13		106	80	68	97	93	103
5	Churi	72	60	55	72	70	70	38	84	126	18	100	109	78	69	95	83	82	72
6	RR shop	20	20	20	15	15	12							21	20	21	21	16	14
7	GMO													01	08	22	14	18	14
		460	286	351	402	410	417	122	167	203	41	121	109	509	349	464	511	472	460

CENTRAL COALFIELDS LIMITED
(A subsidiary of Coal India Limited)

OFFICE OF THE V T MANAGER
GROUP VOCATIONAL TRAINING CENTER
NORTH KARNPURA AREA, DAKRA-829210, DIST-RANCHI (JHARKHAND)

G.V.T.C., N.K.
Dispatch No. 3403
Date: 01.01.2023

Month: -DECEMBER 2022

To,
The Project Officer,
Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop/M & A/Rajhara
Sub: - Project wise training report at GVTC, N K Area, Dakra for the month of DECEMBER 2022
Dear Sir,

Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

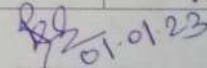
PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESSIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl
KDH	104	--	05	----	----	----	07	106	----	----	----	----	
DAKRA	67	--	15	----	----	----	10	67	----	----	----	----	
ROHINI	62	--	24	----	----	----	04	63	----	----	----	----	
PURNADIH	102	--	--	----	----	----	01	102	----	----	----	----	
CHURI	70	--	04	----	--	08	----	72	----	88	21	----	
RR Shop	12	--	03	----	----	----	02	12	----	----	----	----	
G M O	---	05	---	----	----	----	14	----	----	----	----	----	
TOTAL	417	05	51	--	--	08	--	38	422	--	88	21	--

M & S	---	09	----	----	----	----	54	----	----	----	----	----
A & C	---	03	----	----	----	----	22	----	----	----	----	----

RAJHARA	---	---	---	----	----	----	47	29	----	----	----	----
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GRAND TOTAL	417	17	51	--	--	08	--	161	451	--	88	21	--
--------------------	------------	-----------	-----------	----	----	-----------	----	------------	------------	----	-----------	-----------	----

APPRENTICES N K	MALE	FEMALE	MONTHLY ACHIVEMENT	MALE	FEMALE	PROGRESSIVE ACHIVEMENT
I T I	06	----	06	48	----	48
PDPT	06	---	06	97	----	97
Lamp Handling	----	-----	-----	40	----	40
C S R	----	-----	-----	24	20	44


 V T Manager
 Group Vocational Training Center
 N K Area Dakra

Distribution: -

1. SO (Safety), N K Area, Dakra.
2. Area Training Officer, N K Area, Dakra.

Copy for Kind Information please: -

1. GM (HRD), CCL, Ranchi.
2. General Manager, N.K. Area, Dakra.

CENTRAL COA RI
(A subsidiary of)
OFFICE OF THE
GROUP VOCATION
NORTH KARNPURA AREA, DAKR



C.S. No. 2946
 Date: 31/12/2021

To,
The Project Officer,
Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop

POSTAGE PAID
 R. DAKRA COLLEGE RD - 822001
 Dakra, N.K. Area, N.K. Region
 Jharkhand, India
 PIN-822001
 Tel: 0659-2511111
 Fax: 0659-2511112
 Website: www.ri.gov.in

Sub:-Project wise training report at GVTC, NK Area, Dakra for the month of DECEMBER 2021.

Dear Sir,

Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESSIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl
KDH	108	---	06	---	---	---	---	08	110	---	---	---	---
DAKRA	73	05	---	---	---	---	---	17	73	---	07	---	---
ROHINI	54	---	04	---	---	---	---	04	54	---	-01	---	---
PURNADIH	90	---	---	---	---	---	---	01	92	---	---	13	---
CHURI	70	02	20	---	01	04	---	06	73	03	85	15	---
RR Shop	15	---	07	---	---	---	---	01	15	---	---	---	---
G.M.O	---	03	---	---	---	---	---	18	---	---	---	---	---
TOTAL	410	10	37	---	01	04	---	55	417	03	93	28	---

M & S	---	10	---	---	---	---	---	102	---	---	---	---	---
A & C	---	03	---	---	---	---	---	19	---	---	---	---	---

RAJHARA	---	---	---	---	---	---	---	05	15	---	30	---	---
---------	-----	-----	-----	-----	-----	-----	-----	----	----	-----	----	-----	-----

GRAND TOTAL	410	23	37	---	01	04	---	181	432	03	123	28	---
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ITI APPRENTICES	MALE	FEMALE	MONTHLY ACHIVEMENT	MALE	FEMALE	PROGRESSIVE ACHIVEMENT
N K	---	---	---	82	---	82
CISF	---	---	---	343	---	343

31/12/2021
 V T Manager
 Group Vocational Training Center
 NK Area Dakra

Distribution:-

1. SO (Safety & Training), N K Area, Dakra.

Copy for Kind Information please:-

1. DMS, SEZ, Ranchi Region, Ranchi
2. GM (HRD), CCL, Ranchi.
3. General Manager, N K Area, Dakra.

CENTRAL COALFIELDS LIMITED
(A subsidiary of Coal India Limited)
OFFICE OF THE V T MANAGER
GROUP VOCATIONAL TRAINING CENTER
NORTH KARNPURA AREA, DAKRA-829210, DIST-RANCHI (JHARKHAND)

Month:-DECEMBER 2020

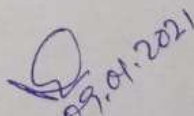
To,
The Project Officer,
Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop/M & A/Rajhara

Sub:-Project wise training report at GVTC, NK Area, Dakra for the month of DECEMBER 2020.

Dear Sir,
Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl.	Basic	Refresher	Spl.
KDH	105	---	10	---	01	---	---	09	106	04	12	---	---
DAKRA	78	01	---	---	---	---	---	02	79	02	---	---	---
ROHINI	52	03	---	---	---	---	---	17	64	13	08	03	---
PURNADIH	80	01	02	---	---	---	---	13	82	02	---	---	---
CHURI	72	---	01	---	---	---	---	02	75	06	11	07	---
RR Shop	15	03	02	---	---	---	---	05	15	01	---	---	---
G M O	----	03	---	---	---	---	---	14	---	---	---	---	---
TOTAL	402	11	15	---	01	---	---	62	421	28	31	10	---
M & A	---	05	---	---	----	----	--	19	---	---	---	---	---
RAJHARA	---	03	03	---	---	---	---	08	21	---	---	---	---
GRAND TOTAL	---	19	18	---	01	----	---	89	442	28	31	10	---

ITI Apprentice	Monthly Achievement	M	F	Progressive Achievement	M	F
	Total =02	02	NIL	Total =09	08	01


V T Manager
Group Vocational Training Center
NK Area Dakra

Distribution:-

1. SO (Safety & Training), N K Area, Dakra.

Copy for Kind Information please:-

1. GM (HRD), CCL, Ranchi.
2. General Manager, N.K. Area, Dakra

V.T.C., N.K.
Despatch No. 652
Date: 02.01.2020



**OFFICE OF THE
GROUP VOCATIONAL
TRAINING CENTER
NORTH KARNPURA AREA, DAKRA**
A Miniratna Company

EPFL6859471IN INR6974916859471
SP DAKRA COLLEERY SO 3829210
Counter No:1,03/01/2020,10:10
To:THE D OF N SA, KANKE ROAD, RANCHI
PIN:834008, Ranchi University S.O
From:GROUP V T G, N K AREA DAKRA
Wt:10gms
Amt:41.30(Cash)/Tax:6.30
<Track on www.indiapost.gov.in>
<Dial 1800 266 6886>

Date: **Month:-DECEMBER 2019**

To,
The Director of Mines Safety,
SEZ Ranchi, Ranchi Region,
RI-III, CMPDIL Complex, Kanke Road, Ranchi, Jharkhand, Pin-834008

Sub:-Project wise training report at GVTC, NK Area Dakra for the month of December 2019.

Dear Sir,

Please find here with the training report at Group Vocational Training Center, N K Area, Dakra.

PROJECT N K	ANNUAL TARGET (REF)	TRAINING DURING THE MONTH						PROGRESIVE					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl	Basic	Refresher	Spl	Basic	Refresher	Spl.	Basic	Refresher	Spl.
KDH	99	---	---	---	---	---	---	07	103	03	07	02	---
DAKRA	65	---	---	---	---	---	---	09	66	07	06	04	---
ROHINI	52	02	02	-	05	05	---	04	52	06	33	12	---
PURNADIH	60	---	01	---	---	---	---	06	60	03	05	08	---
CHURI	55	---	---	---	08	---	---	28	66	01	98	28	---
RR Shop	20	---	04	---	---	---	---	01	20	---	---	---	---
G M O	---	---	---	---	---	---	---	22	---	---	---	---	---
TOTAL	351	02	07	---	13	05	---	77	367	20	149	54	---
M & A	---	01	---	---	---	---	---	35	---	---	---	---	---
RAJHARA	---	---	07	---	---	---	---	53	24	---	16	---	---
GRAND TOTAL	---	03	14	---	13	05	---	165	391	20	165	54	---

02.01.2020

V T Manager
Group Vocational Training Center
NK Area Dakra

Distribution:-

1. SO (Safety & Training), N K Area, Dakra.
2. The Project Officer-Dakra/ KDH/ Rohini /Purnadih/ Churi/ R. R. Shop/M&A/Rajhara

Copy for Kind Information please:-

1. GM (HRD), CCL, Ranchi.
2. General Manager, N.K. Area, Dakra

CENTRAL COAL FIELDS LIMITED
OFFICE OF THE VT MANAGER
Group Vocational Training Center
N.K. Area Dakra , P.O.-Dakra, PIN-829210, Dist-Ranchi

Date: 01/11/19

To,
 The Director of Mines Safety,
 SEZ Ranchi, Ranchi Region,
 RI-III, CMPDIL Complex, Kanke Road, Ranchi, Jharkhand, PIN 834008.

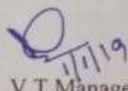
Sub:- Project wise training report at GVTC, NK Area, Dakra for the calender year 2018.

Dear Sir,

Please find with the training reports at Group Vocational Training Center NK Area Dakra

Project Name	Annual Target	Training during the month						Progressive					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Spl.	Basic	Refresher	spl	Basic	Refresher	Spl.	Basic	Refresher	Spl.
KDH	35	—	—	—	—	—	—	03	36	—	03	—	—
Dakra	60	—	—	—	06	—	—	08	61	—	07	04	—
Rohini	51	—	—	—	11	04	—	11	53	—	41	19	—
PND	60	—	07	—	—	02	—	18	62	—	02	07	—
Churi	60	—	—	02	04	—	—	02	62	05	63	21	—
RR Shop	20	—	07	—	—	—	—	—	20	—	—	—	—
Gmo	—	—	—	—	—	—	—	08	—	—	—	—	—
Total	286	—	14	02	21	06	—	50	294	05	116	51	—

M&A	—	—	—	—	—	—	—	50	—	—	—	—	—
Rajhara	—	—	10	—	—	—	—	—	10	—	—	—	—
Total	—	—	10	—	—	—	—	50	10	—	—	—	—


 V T Manager
 Group Vocational Training Center
 NK Area Dakra

Distribution:-

1. SO(Safety&Training), NK,

Copy for Kind Information Please:-

1. General Manager, N.K. Area Dakra

etc



COALFIELDS LIMITED
 SF DAKRA COLLIERY <829210>
 GSTN No: 20AAADP096IL125
 E: 913162718111
 Counter No: 1, DF-Codes: P6
 To: DIRECTOR OF MINES SA, RANCHI
 RANCHI, PIN: 834008
 From: MANAGER GROUP VOCATIONAL TRAINING, NK DAKRA
 Dt: 02/01/2018 . 10:57
 Amt: 41.00
 REGD @% 3 . SGT @%: 3.00



COALFIELDS LIMITED
 (Niratna Company)
 OF THE VT MANAGER
 GROUP VOCATIONAL TRAINING CENTER
 210, DIST-RANCHI (JHARKHAND)

Month-DECEMBER 2017

R R Shop/Magadh - Amrapali/Rajhara.
 at GVTC, NK Area, Dakra.

Dear Sir,

Kindly find placed hereunder format in respect of training reports at Group Vocational Training Centre, NK Area for your kind perusal.

Project Name	Annual Target Ref)	Training during the month						Progressive					
		Departmental			Contractor			Departmental			Contractor		
		Basic	Refresher	Special	Basic	Ref.	Specil	Basic	Refresher	Special	Basic	Ref.	Special
KDH	132	---	---	----	----	----	01	133	----	28	11	----	
Dakra	64	---	---	----	----	----	15	64	02	08	09	----	
Rohini	72	---	---	----	----	03	16	72	----	13	03	----	
Purnadih	100	---	24	----	----	02	05	101	----	07	05	----	
Churi U/G	72	01	01	----	----	----	02	76	----	05	33	----	
M R S Churi	---	---	---	----	----	----	----	----	----	----	----	----	
R.R.S Dakra	20	---	02	----	----	----	01	20	----	----	----	----	
GM Unit	---	---	---	----	----	----	01	----	----	----	----	----	
Total	460	01	27	----	---	05	41	466	02	61	61	----	

M & A	----	02	----	----	----	----	21	----	----	----	----	----
Rajhara	----	----	----	----	----	----	----	14	----	----	----	----

19/1/2018
 VT Manager,

Group Vocational Training Centre
 N K, Area, Dakra

Copy to:-

1. SO (Safety)/Area Training Officer, N K Area, Dakra.

Copy for kind information:-

- 1 GM (HRD), CCL
2. General Manager, NK Area Dakra.

TEST REPORT

12/22 Test Report No. 2220	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Oct-22 1st FN	05/10/22-06/10/22	17-10-2022	17/10/22-26/10/22	294	119	58	< 25	< 6	East Sunny
Oct-22 2nd FN	19/10/22-20/10/22	01-11-2022	01/11/22-07/11/22	196	88	38	< 25	< 6	East Sunny
Nov-22 3rd FN	03/11/22-04/11/22	16-11-2022	16/11/22-23/11/22	185	86	36	< 25	< 6	East Sunny
Nov-22 4th FN	18/11/22-19/11/22	01-12-2022	01/12/22-09/12/22	235	113	49	< 25	< 6	East Sunny
Dec-22 5th FN	03/12/22-04/12/22	16-12-2022	16/12/22-21/12/22	223	82	47	< 25	< 6	East Sunny
Dec-22 6th FN	18/12/22-19/12/22	02-01-2023	02/01/23-10/01/23	163	81	45	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

Analysed By

Authorized Signatory

ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

TEST REPORT

12/22 Test Report No. 2221	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** Bhoot Nagar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	05/10/22-06/10/22	17-10-2022	17/10/22-26/10/22	252	97	55	< 25	< 6	East Sunny
Oct-22 2nd FN	19/10/22-20/10/22	01-11-2022	01/11/22-07/11/22	161	80	45	< 25	< 6	East Sunny
Nov-22 3rd FN	03/11/22-04/11/22	16-11-2022	16/11/22-23/11/22	137	72	35	< 25	< 6	East Sunny
Nov-22 4th FN	18/11/22-19/11/22	01-12-2022	01/12/22-09/12/22	171	76	38	< 25	< 6	East Sunny
Dec-22 5th FN	03/12/22-04/12/22	16-12-2022	16/12/22-21/12/22	249	96	52	< 25	< 6	East Sunny
Dec-22 6th FN	18/12/22-19/12/22	02-01-2023	02/01/23-10/01/23	205	94	49	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

Analysed By

Authorized Signatory

ENVIRONMENT LABORATORY, CMPDI (HQ) , RANCHI

TEST REPORT

12/22 Test Report No. 2222	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Oct-22 1st FN	05/10/22-06/10/22	17-10-2022	17/10/22-26/10/22	140	76	43	< 25	< 6	East Sunny
Oct-22 2nd FN	19/10/22-20/10/22	01-11-2022	01/11/22-07/11/22	205	92	53	< 25	< 6	East Sunny
Nov-22 3rd FN	03/11/22-04/11/22	16-11-2022	16/11/22-23/11/22	145	85	47	< 25	< 6	East Sunny
Nov-22 4th FN	18/11/22-19/11/22	01-12-2022	01/12/22-09/12/22	135	58	26	< 25	< 6	East Sunny
Dec-22 5th FN	03/12/22-04/12/22	16-12-2022	16/12/22-21/12/22	174	72	35	< 25	< 6	East Sunny
Dec-22 6th FN	18/12/22-19/12/22	02-01-2023	02/01/23-10/01/23	128	63	32	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept. '2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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ENVIRONMENT LABORATORY, CMPDI (HQ) , RANCHI

TEST REPORT

12/22 Test Report No. 2223	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** Karkatta Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Oct-22 1st FN	06/10/22-07/10/22	17-10-2022	17/10/22-26/10/22	122	53	22	< 25	< 6	East Sunny
Oct-22 2nd FN	20/10/22-21/10/22	01-11-2022	01/11/22-07/11/22	131	64	26	< 25	< 6	East Sunny
Nov-22 3rd FN	04/11/22-05/11/22	16-11-2022	16/11/22-23/11/22	164	69	33	< 25	< 6	East Sunny
Nov-22 4th FN	19/11/22-20/11/22	01-12-2022	01/12/22-09/12/22	115	66	30	< 25	< 6	East Sunny
Dec-22 5th FN	04/12/22-05/12/22	16-12-2022	16/12/22-21/12/22	157	84	44	< 25	< 6	East Sunny
Dec-22 6th FN	19/12/22-20/12/22	02-01-2023	02/01/23-10/01/23	219	75	35	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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ENVIRONMENT LABORATORY, CMPDI (HQ) , RANCHI

TEST REPORT

12/22 Test Report No. 2224	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** BishrampurVillage

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter ($\text{PM}_{10}^{+>\text{PM}_{10}}$)TPM	Particulate Matter (PM_{10})	Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Oct-22 1st FN	06/10/22-07/10/22	17-10-2022	17/10/22-26/10/22	230	92	57	< 25	< 6	East Sunny
Oct-22 2nd FN	20/10/22-21/10/22	01-11-2022	01/11/22-07/11/22	191	87	51	< 25	< 6	East Sunny
Nov-22 3rd FN	04/11/22-05/11/22	16-11-2022	16/11/22-23/11/22	140	77	43	< 25	< 6	East Sunny
Nov-22 4th FN	19/11/22-20/11/22	01-12-2022	01/12/22-09/12/22	178	82	49	< 25	< 6	East Sunny
Dec-22 5th FN	04/12/22-05/12/22	16-12-2022	16/12/22-21/12/22	175	74	39	< 25	< 6	East Sunny
Dec-22 6th FN	19/12/22-20/12/22	02-01-2023	02/01/23-10/01/23	114	66	31	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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ENVIRONMENT LABORATORY, CMPDI (HQ) , RANCHI

TEST REPORT

12/22 Test Report No. 2225	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** KDH Siding Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Oct-22 1st FN	06/10/22-07/10/22	17-10-2022	17/10/22-26/10/22	192	83	44	< 25	< 6	East Sunny
Oct-22 2nd FN	20/10/22-21/10/22	01-11-2022	01/11/22-07/11/22	218	110	65	< 25	< 6	East Sunny
Nov-22 3rd FN	04/11/22-05/11/22	16-11-2022	16/11/22-23/11/22	252	102	57	< 25	< 6	East Sunny
Nov-22 4th FN	19/11/22-20/11/22	01-12-2022	01/12/22-09/12/22	249	101	54	< 25	< 6	East Sunny
Dec-22 5th FN	04/12/22-05/12/22	16-12-2022	16/12/22-21/12/22	215	107	63	< 25	< 6	East Sunny
Dec-22 6th FN	19/12/22-20/12/22	02-01-2023	02/01/23-10/01/23	281	153	72	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

TEST REPORT

12/22 Test Report No. 2226	Job No. 094322160	Year	FY2022-23
Type of Sample:	Noise	Quarter Ending	Dec-22
Customer	CCL		
Testing/ Sampling Protocol:	'The noise pollution (Regulation and Control), Rules,2000, LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP

Station Name	Noise Level dB(A) Leq					
	Oct-22 1st FN	Oct-22 2nd FN	Nov-22 3rd FN	Nov-22 4th FN	Dec-22 5th FN	Dec-22 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	05-10-2022	19-10-2022	03-11-2022	18-11-2022	03-12-2022	18-12-2022
1. P.O.Office	70.8/64.7	71.2/65.3	71.6/65.1	70.9/64.5	70.8/64.5	71.5/65.4
Date of recording	05-10-2022	19-10-2022	03-11-2022	18-11-2022	03-12-2022	18-12-2022
2. Booth nagar	68.8/62.7	68.8/62.7	69.3/63.4	68.5/62.3	68.7/62.6	68.6/62.7
Date of recording	05-10-2022	19-10-2022	03-11-2022	18-11-2022	03-12-2022	18-12-2022
3. Water Tanker Filling Station	71.7/65.3	70.9/64.8	70.5/64.7	70.6/64.4	70.7/64.4	72.3/66.2
Date of recording	06-10-2022	20-10-2022	04-11-2022	19-11-2022	04-12-2022	19-12-2022
5. Karkatta Village	69.5/63.2	67.9/61.8	68.4/62.3	67.9/61.8	67.9/61.8	67.8/61.4
Date of recording	06-10-2022	20-10-2022	04-11-2022	19-11-2022	04-12-2022	19-12-2022
6. Bistrampur Village	68.6/62.3	68.5/62.3	67.8/61.7	68.2/62.4	68.2/62.5	66.9/60.7
Date of recording	06-10-2022	20-10-2022	04-11-2022	19-11-2022	04-12-2022	19-12-2022
7. KDH Siding Office	72.5/66.3	72.6/66.4	71.8/65.6	72.2/66.3	71.7/65.8	71.8/65.3

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

Analysed By

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

TEST REPORT

12/22 Test Report No. 2227	Job No. 094322160	Year	FY2022-23
Type of Sample:	Effluent Water	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: North Karanpura **Project:** KDH OCP **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-22 1st FN	08/10/22	17/10/22	17/10/22-31/10/22	12	<2.00	7.8	21
Oct-22 2nd FN	22/10/22	01/11/22	01/11/22-15/11/22	12	<2.00	7.91	28
Nov-22 3rd FN	05/11/22	16/11/22	16/11/22-30/11/22	12	<2.00	7.8	31
Dec-22 5th FN	06/12/22	16/12/22	16/12/22-30/12/22	12	<2.00	7.2	30
Dec-22 6th FN	21/12/22	02/01/23	02/01/23-13/01/23	16	<2.00	7.9	33
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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ENVIRONMENT LABORATORY, CMPDI (HQ), RANCHI

TEST REPORT

12/22 Test Report No. 2228	Job No. 094322160	Year	FY2022-23
Type of Sample:	Effluent Water	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpur **Project:** KDH OCP **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-22 1st FN	08/10/22	17/10/22	17/10/22-31/10/22	84	6.4	6.74	152
Oct-22 2nd FN	22/10/22	01/11/22	01/11/22-15/11/22	76	5.42	7.78	104
Nov-22 3rd FN	05/11/22	16/11/22	16/11/22-30/11/22	420	7.46	7.3	711
Dec-22 5th FN	06/12/22	16/12/22	16/12/22-30/12/22	552	8.62	7.5	1148
Dec-22 6th FN	21/12/22	02/01/23	02/01/23-13/01/23	416	7.66	8	713
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/22 Test Report No. 2229	Job No. 094322160	Year	FY2022-23
Type of Sample:	Effluent Water	Quarter Ending	Dec-22
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpur **Project:** KDH OCP **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-22 1st FN	08/10/22	17/10/22	17/10/22-31/10/22	16	<2.00	7.77	30
Oct-22 2nd FN	22/10/22	01/11/22	01/11/22-15/11/22	12	<2.00	7.91	26
Nov-22 3rd FN	05/11/22	16/11/22	16/11/22-30/11/22	36	<2.00	7.4	96
Dec-22 5th FN	06/12/22	16/12/22	16/12/22-30/12/22	16	<2.00	7.6	28
Dec-22 6th FN	21/12/22	02/01/23	02/01/23-13/01/23	12	<2.00	7.9	27
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

12/22 Test Report No. 2230	Job No. 094322160	Year	2022-23
Type of Sample:	Effluent Water	Quarter Ending	Dec.'22
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01/12/22
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	01/12/22-06/01/23
Testing /Sampling Protocol	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP
Stations: 1. Mine Quarry Water (Nov 2nd FN) **Date of Sampling:** 21/11/2022
 2. Workshop Effluent (Nov 2nd FN) 21/11/2022
 3. OB Dump Effluent (Nov 2nd FN) 21/11/2022

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l, Max	0.69	0.34	0.56	0.02	50.0	IS 3025/34:1988, R : 2009, Nessler's Method
2	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	0.002	0.2	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l, Max	<2.00	10.0	<2.00	2.00	30.0	IS 3025 /44:1993, R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	0.0004	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
5	COD, mg/l, Max	12	348	16	4.00	250.0	APHA, 23rd Edition, Closed Reflux, Titrimetric Method: 2017
6	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	0.02	3.0	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
7	Dissolved Phosphate, mg/l, Max	<0.30	<0.30	<0.30	0.30	5.0	APHA, 23rd Edition Molybdovanadate Method, 2017
8	Fluoride (as F) mg/l, Max	0.95	0.99	0.92	0.02	2.0	APHA, 23rd Edition, SPADNS Method, 2017
9	Free Ammonia, mg/l, Max	<0.02	<0.02	<0.02	0.02	5.0	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	0.01	0.1	APHA, 23rd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	0.04	3.0	IS 3025 /53: 2003, R : 2009 , AAS-(Air-Ac-Flame)
12	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	0.001	0.1	APHA, 23rd Edition 3120 B ICP Method, 2017
13	Manganese(as Mn), mg/l, Max	<0.01	<0.01	<0.01	0.01	2.0	IS-3025/59:2006, AAS (Air-Ac-Flame)
14	Nickel (as Ni), mg/l, Max	<0.003	<0.003	<0.003	0.003	3.0	APHA, 23rd Edition 3120 B ICP Method, 2017
15	Nitrate Nitrogen, mg/l, Max	1.41	0.68	1.42	0.50	10.0	APHA, 23rd Edition, UV-Spectrophotometric Method, 2017
16	Oil & Grease, mg/l, Max	<2.00	8.7	<2.00	2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric Method
17	pH value	7.6	7.5	7.6	1.0	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric Method
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	<0.001	<0.001	<0.001	0.001	1.0	APHA, 23rd Edition, 4- Amino Antipyrine Method, 2017
19	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	0.0005	0.05	APHA, 23rd Edition 3120 B ICP Method, 2017
20	Sulphide (as S ⁻²), mg/l, Max	0.006	<0.005	<0.005	0.005	2.0	APHA, 23rd Edition Methylene Blue Method, 2017
21	Temperature (° C)	20.3	20.4	20.2	Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, R:2002, Thermometric
22	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	2.0	APHA, 23rd Edition 3120 B ICP Method, 2017
23	Total Kjeldahl Nitrogen, mg/l, Max	2.8	1.4	1.4	1.00	100.0	APHA, 23rd Edition, Kjeldahl Method: 2017
24	Total Residual Chlorine, mg/l, Max	<0.02	<0.02	<0.02	0.02	1.0	APHA, 23rd Edition, DPD Method, 2017
25	Total Suspended Solids, mg/l, Max	20	768	30	10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric Method
26	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	0.005	5.0	IS 3025 /49: 1994, R: 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/22 Test Report No. 2231	Job No. 094322160	Year	FY2022-23
Type of Sample:	Surface Water	Quarter Ending	Dec-22
Customer	CCL	Date of Receipt:	17-10-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.10.22-15.12.22
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. U/S of Sonadoba Nala		08-10-2022
	2. D/S of Sonadoba Nala		08-10-2022
	3. U/S of Damodar River		08-10-2022
	4. D/S of Damodar River		08-10-2022

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.4	2.1	<2.0	<2.0	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	10	12	8	8	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.2	7.3	7.8	7.9	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.44	0.45	0.51	0.52	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃), mg/l, Max	2.52	2.47	1.68	1.79	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.18	7.99	8.07	8.19	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄) mg/l, Max	18	20	12	14	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	275	293	225	247	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	38	34	16	17	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	0.006	0.007	0.008	0.006	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

12/22 Test Report No. 2232	Job No. 094322160	Year	FY2022-23
Type of Sample:	Drinking Water	Quarter Ending	Dec-22
Customer	CCL	Date of Receipt:	17-10-2022
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	17.10.22-15.12.22
Testing/ Sampling Protocol:	IS:10500 Drinking Water Standards, LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. Well Water at Bishrampur Village		08-10-2022
	2. Well Water at Bhootnagar Village		08-10-2022
	3. Well Water at Karkatta Village		08-10-2022
	4. Well Water at Bukbuka Village		08-10-2022

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.20	<0.20	<0.20	<0.20	0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003	APHA, 23rd Edition AAS-GTA Method, 2017
3	Calcium (as Ca), mg/l, Max	51.2	59.2	70.4	68.8	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	46	48	42	40	2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.18	0.21	0.18	0.19	0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	0.03	<0.02	<0.02	<0.02	0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	1.0	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.01	APHA, 23rd Edition AAS-GTA Method, 2017
10	Manganese (as Mn), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, Max	<0.003	<0.003	<0.003	<0.003	0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO ₃), mg/l, Max	17.90	17.30	16.40	17.80	0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	7.67	7.74	7.62	7.59	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 23rd Edition, 4-Amino Autipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO ₄) mg/l, Max	114	121	128	134	2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (c _a CO ₃), mg/l, Max	176	196	176	188	4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	447	473	402	440	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (c _a CO ₃), mg/l, Max	288	332	296	308	4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1	1	1	2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	0.008	<0.005	0.007	0.006	0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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**TEST REPORT**

03/23 Test Report No. 2218	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** P.O.Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	04/01/23-05/01/23	16-01-2023	16/01/23-19/01/23	385	192	71	< 25	< 6	East Sunny
Jan-23 2nd FN	18/01/23-19/01/23	01-02-2023	01/02/23-08/02/23	241	135	65	< 25	< 6	East Sunny
Feb-23 3rd FN	03/02/23-04/02/23	16-02-2023	16/02/23-17/02/23	215	96	53	< 25	< 6	East Sunny
Feb-23 4th FN	18/02/23-19/02/23	01-03-2023	01/03/23-14/03/23	248	117	50	< 25	< 6	East Sunny
Mar-23 5th FN	03/03/23-04/03/23	16-03-2023	16/03/23-22/03/23	160	78	35	< 25	< 6	East Sunny
Mar-23 6th FN	18/03/23-19/03/23	01-04-2023	01/04/23-17/04/23	167	101	55	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

03/23 Test Report No. 2219	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** Bhoot Nagar Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Jan-23 1st FN	04/01/23-05/01/23	16-01-2023	16/01/23-19/01/23	209	85	47	< 25	< 6	East Sunny
Jan-23 2nd FN	18/01/23-19/01/23	01-02-2023	01/02/23-08/02/23	227	92	56	< 25	< 6	East Sunny
Feb-23 3rd FN	03/02/23-04/02/23	16-02-2023	16/02/23-17/02/23	137	63	35	< 25	< 6	East Sunny
Feb-23 4th FN	18/02/23-19/02/23	01-03-2023	01/03/23-14/03/23	120	68	38	< 25	< 6	East Sunny
Mar-23 5th FN	03/03/23-04/03/23	16-03-2023	16/03/23-22/03/23	127	68	37	< 25	< 6	East Sunny
Mar-23 6th FN	18/03/23-19/03/23	01-04-2023	01/04/23-17/04/23	120	65	32	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

03/23 Test Report No. 2220	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** Water Tanker Filling Station

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	04/01/23-05/01/23	16-01-2023	16/01/23-19/01/23	267	97	54	< 25	< 6	East Sunny
Jan-23 2nd FN	18/01/23-19/01/23	01-02-2023	01/02/23-08/02/23	166	88	41	< 25	< 6	East Sunny
Feb-23 3rd FN	03/02/23-04/02/23	16-02-2023	16/02/23-17/02/23	277	92	56	< 25	< 6	East Sunny
Feb-23 4th FN	18/02/23-19/02/23	01-03-2023	01/03/23-14/03/23	210	88	53	< 25	< 6	East Sunny
Mar-23 5th FN	03/03/23-04/03/23	16-03-2023	16/03/23-22/03/23	138	78	31	< 25	< 6	East Sunny
Mar-23 6th FN	18/03/23-19/03/23	01-04-2023	01/04/23-17/04/23	153	76	46	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

03/23 Test Report No. 2221	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** Karkatta Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM_{10}^+ > PM_{10})TPM	Particulate Matter (PM_{10})	Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	05/01/23-06/01/23	16-01-2023	16/01/23-19/01/23	172	74	36	< 25	< 6	East Sunny
Jan-23 2nd FN	19/01/23-20/01/23	01-02-2023	01/02/23-08/02/23	173	70	36	< 25	< 6	East Sunny
Feb-23 3rd FN	04/02/23-05/02/23	16-02-2023	16/02/23-17/02/23	187	77	35	< 25	< 6	East Sunny
Feb-23 4th FN	19/02/23-20/02/23	01-03-2023	01/03/23-14/03/23	130	68	41	< 25	< 6	East Sunny
Mar-23 5th FN	04/03/23-05/03/23	16-03-2023	16/03/23-22/03/23	265	91	46	< 25	< 6	East Sunny
Mar-23 6th FN	19/03/23-20/03/23	01-04-2023	01/04/23-17/04/23	161	81	42	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

03/23 Test Report No. 2222	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** BishrampurVillage

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO _x)	
Jan-23 1st FN	05/01/23-06/01/23	16-01-2023	16/01/23-19/01/23	207	81	41	< 25	< 6	East Sunny
Jan-23 2nd FN	19/01/23-20/01/23	01-02-2023	01/02/23-08/02/23	134	64	24	< 25	< 6	East Sunny
Feb-23 3rd FN	04/02/23-05/02/23	16-02-2023	16/02/23-17/02/23	112	53	23	< 25	< 6	East Sunny
Feb-23 4th FN	19/02/23-20/02/23	01-03-2023	01/03/23-14/03/23	159	75	34	< 25	< 6	East Sunny
Mar-23 5th FN	04/03/23-05/03/23	16-03-2023	16/03/23-22/03/23	134	76	34	< 25	< 6	East Sunny
Mar-23 6th FN	19/03/23-20/03/23	01-04-2023	01/04/23-17/04/23	136	62	31	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

03/23 Test Report No. 2223	Job No. 094322160	Year	FY2022-23
Type of Sample	Ambient Air	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution, LQR 32		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP **Stations:** KDH Siding Office

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_x)	
Jan-23 1st FN	05/01/23-06/01/23	16-01-2023	16/01/23-19/01/23	544	280	76	< 25	< 6	East Sunny
Jan-23 2nd FN	19/01/23-20/01/23	01-02-2023	01/02/23-08/02/23	169	96	50	< 25	< 6	East Sunny
Feb-23 3rd FN	04/02/23-05/02/23	16-02-2023	16/02/23-17/02/23	313	146	72	< 25	< 6	East Sunny
Feb-23 4th FN	19/02/23-20/02/23	01-03-2023	01/03/23-14/03/23	259	139	70	< 25	< 6	East Sunny
Mar-23 5th FN	04/03/23-05/03/23	16-03-2023	16/03/23-22/03/23	256	126	68	< 25	< 6	East Sunny
Mar-23 6th FN	19/03/23-20/03/23	01-04-2023	01/04/23-17/04/23	151	73	43	< 25	< 6	East Sunny

Note:

1. Gazette Notification No. G.S.R 742(E) dt.25th Sept.'2000 is applicable in core zone.
2. Gazette Notification No. G.S.R 826 (E) dt.Nov.'2009 is applicable in buffer zone.

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**TEST REPORT**

03/23 Test Report No. 2224	Job No. 094322160	Year	FY2022-23
Type of Sample:	Noise	Quarter Ending	Mar-23
Customer	CCL		
Testing/ Sampling Protocol:	'The noise pollution (Regulation and Control), Rules,2000, LQR 34		
Remarks:			

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpura **Project:** KDH OCP

Station Name	Noise Level dB(A) Leq					
	Jan-23 1st FN	Jan-23 2nd FN	Feb-23 3rd FN	Feb-23 4th FN	Mar-23 5th FN	Mar-23 6th FN
	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night	Day/Night
Date of recording	04-01-2023	18-01-2023	03-02-2023	18-02-2023	03-03-2023	18-03-2023
1. P.O.Office	69.9/63.7	70.3/64.5	71.3/65.2	70.5/64.3	71.4/65.2	70.6/64.8
Date of recording	04-01-2023	18-01-2023	03-02-2023	18-02-2023	03-03-2023	18-03-2023
2. Booth nagar	66.7/60.5	70.2/64.3	67.8/61.7	68.6/62.5	67.5/61.3	67.3/61.5
Date of recording	04-01-2023	18-01-2023	03-02-2023	18-02-2023	03-03-2023	18-03-2023
3. Water Tanker Filling Station	70.4/64.3	71.1/65.6	70.6/64.5	70.2/64.3	69.9/63.8	70.7/64.6
Date of recording	05-01-2023	19-01-2023	04-02-2023	19-02-2023	04-03-2023	19-03-2023
5. Karkatta Village	67.8/61.4	68.3/62.4	68.3/62.4	67.9/61.8	68.1/62.3	66.8/60.7
Date of recording	05-01-2023	19-01-2023	04-02-2023	19-02-2023	04-03-2023	19-03-2023
6. Bistrampur Village	66.3/60.4	67.5/61.2	66.9/60.8	68.4/62.3	67.7/63.5	65.9/59.6
Date of recording	05-01-2023	19-01-2023	04-02-2023	19-02-2023	04-03-2023	19-03-2023
7. KDH Siding Office	71.5/65.6	71.7/65.3	71.7/65.6	71.6/65.4	70.7/64.8	71.3/65.2

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

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TEST REPORT

03/23 Test Report No. 2225	Job No. 094322160	Year	FY2022-23
Type of Sample:	Effluent Water	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area: North Karanpura **Project:** KDH OCP **Stations:** Mine Quarry Water

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-23 1st FN	07/01/23	16/01/23	16/01/23-31/01/23	20	<2.00	7.4	44
Jan-23 2nd FN	21/01/23	01/02/23	01/02/23-15/02/23	20	<2.00	7.8	49.2
Feb-23 3rd FN	06/02/23	16/02/23	16/02/23-28/02/23	20	<2.00	8	39.2
Feb-23 4th FN	21/02/23	01/03/23	01/03/23-15/03/23	24	<2.00	8.2	68
Mar-23 5th FN	06/03/23	16/03/23	16/03/23-31/03/23	20	<2.00	7.6	47
Mar-23 6th FN	21/03/23	03/04/23	03/04/23-13/04/23	20	<2.00	8.3	53
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

03/23 Test Report No. 2226	Job No. 094322160	Year	FY2022-23
Type of Sample:	Effluent Water	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpur **Project:** KDH OCP **Stations:** Workshop Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-23 1st FN	07/01/23	16/01/23	16/01/23-31/01/23	210	5.41	7.6	329
Jan-23 2nd FN	21/01/23	01/02/23	01/02/23-15/02/23	124	5.21	8.1	276.1
Feb-23 3rd FN	06/02/23	16/02/23	16/02/23-28/02/23	216	7.21	7.7	428
Feb-23 4th FN	21/02/23	01/03/23	01/03/23-15/03/23	236	6.82	8.1	427
Mar-23 5th FN	06/03/23	16/03/23	16/03/23-31/03/23	180	6.2	7.8	376
Mar-23 6th FN	21/03/23	03/04/23	03/04/23-13/04/23	52	3	8.2	156
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

03/23 Test Report No. 2227	Job No. 094322160	Year	FY2022-23
Type of Sample:	Effluent Water	Quarter Ending	Mar-23
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Testing/ Sampling Protocol:	MOEF -SCH-VI STANDARDS, Class 'A', LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area : North Karanpur **Project:** KDH OCP **Stations:** OB Dump Effluent

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-23 1st FN	07/01/23	16/01/23	16/01/23-31/01/23	24	<2.00	7.9	50
Jan-23 2nd FN	21/01/23	01/02/23	01/02/23-15/02/23	16	<2.00	8.1	37.4
Feb-23 3rd FN	06/02/23	16/02/23	16/02/23-28/02/23	24	<2.00	8.1	57.2
Feb-23 4th FN	21/02/23	01/03/23	01/03/23-15/03/23	24	<2.00	8.1	70
Mar-23 5th FN	06/03/23	16/03/23	16/03/23-31/03/23	16	<2.00	7.8	37
Mar-23 6th FN	21/03/23	03/04/23	03/04/23-13/04/23	16	<2.00	8.3	47
BIS Standard & Method				APHA, 23rd Edition, Closed Reflux, Titrimetric Method, 2017	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric Method

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TEST REPORT

03/23 Test Report No. 2228	Job No. 094322160	Year	FY2022-23
Type of Sample:	Surface Water	Quarter Ending	Mar-23
Customer	CCL	Date of Receipt:	16-01-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.01.23-16.03.23
Testing/ Sampling Protocol:	LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	North Karanpura	Project:	KDH OCP
Stations:	1. U/S of Sonadoba Nala 2. D/S of Sonadoba Nala 3. U/S of Damodar River 4. D/S of Damodar River	Date of Sampling:	07-01-2023 07-01-2023 07-01-2023 07-01-2023

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	IS 3025/37:1988 R : 2003, AAS-VGA, Method
2	BOD (3 days 27°C), mg/l, Max	2.6	<2.0	<2.0	2.3	2.00	IS 3025 /44: 1993, R: 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	APHA, 23rd Edition AAS-GTA Method, 2017
4	Chlorides (as Cl), mg/l, Max	22	22	8	10	2.00	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Dissolved Oxygen, min.	7.1	7.6	7.7	7.2	0.10	IS 3025/38: 1989, R:2003, Winkler Azide Method
7	Fluoride (as F) mg/l, Max	0.15	0.24	0.89	0.97	0.02	APHA, 23rd Edition, SPADNS Method, 2017
8	Hexavalent Chromium, mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	APHA, 23rd Edition, 2017 Diphenylcarbohydrazide,
9	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	IS 3025 /53: 2003, R : 2009, AAS (Air-Ac-Flame)
10	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition AAS-GTA Method, 2017
11	Nitrate (as NO ₃), mg/l, Max	11.76	21.09	3.82	4.00	0.50	APHA, 23rd Edition, UV - Spectrophotometric, 2017
12	pH value	8.1	8.2	8.4	8.3	1.0	IS-3025/11:1983, R-1996, Electrometric Method
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	APHA, 23rd Edition, 2017, 4-Amino Antipyrine Method,
14	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	IS 3025/56:2003 AAS-VGA Method
15	Sulphate (as SO ₄) mg/l, Max	97	108	307	302	2.00	APHA, 23rd Edition Turbidity Method, 2017
16	Total Dissolved Solids, mg/l, Max	620	611	179	189	25.00	IS 3025 /16:1984 R : 2006, Gravimetric Method
17	Total Suspended Solids, mg/l, Max	34	28	15	21	10.00	IS 3025 /17:1984, R :1996, Gravimetric Method
18	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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TEST REPORT

03/23 Test Report No. 2229	Job No. 094322160	Year	FY2022-23
Type of Sample:	Drinking Water	Quarter Ending	Mar-23
Customer	CCL	Date of Receipt:	16-01-2023
Mode of Receipt of Sample:	Joint sampling with customer	Date of Analysis:	16.01.23-16.03.23
Testing/ Sampling Protocol:	IS:10500 Drinking Water Standards, LQR 33		
Remarks & Observation:	Samples received in 5 ltrs plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results: -

Area :	North Karanpura	Project:	KDH OCP
Stations:		Date of Sampling:	
	1. Well Water at Bishrampur Village		07-01-2023
	2. Well Water at Bhootnagar Village		07-01-2023
	3. Well Water at Karkatta Village		07-01-2023
	4. Well Water at Bukbuka Village		07-01-2023

Sl. No	Parameter	Sampling Stations				Detection Limit	IS:10500 Standards	Standard / Test Method
		1	2	3	4			
1	Boron (as B), mg/l, Max	<0.2	<0.2	<0.2	<0.2	0.20	0.5	APHA, 23rd Edition Carmine Method; 2017
2	Cadmium (as Cd), mg/l, Max	<0.0004	<0.0004	<0.0004	<0.0004	0.0004	0.003	APHA, 23rd Edition AAS-GTA Method; 2017
3	Calcium (as Ca), mg/l, Max	56	62.4	57.6	72	1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	38	42	38	40	2.00	250	IS-3025/32:1988, R-2007, Argentometric Method
5	Copper (as Cu), mg/l, Max	<0.02	<0.02	<0.02	<0.02	0.02	0.05	IS 3025/42: 1992, R : 2009, AAS (Air-Ac-Flame)
6	Fluoride (as F) mg/l, Max	0.14	0.16	0.49	0.46	0.02	1.0	APHA, 23rd Edition, SPADNS Method, 2017
7	Free Residual Chlorine, mg/l, Min	0.04	0.04	0.07	0.04	0.02	0.2	APHA, 23rd Edition, DPD Method, 2017
8	Iron (as Fe), mg/l, Max	<0.04	<0.04	<0.04	<0.04	0.04	1.0	IS 3025 /53: 2003, R : 2009 AAS (Air-Ac-Flame)
9	Lead (as Pb), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.01	APHA, 23rd Edition AAS-GTA Method; 2017
10	Manganese (as Mn), mg/l, Max	<0.01	<0.01	<0.01	<0.01	0.01	0.1	IS-3025/59:2006, AAS (Air-Ac-Flame) Method
11	Nickel (as Ni), mg/l, Max	<0.003	<0.003	<0.003	<0.003	0.003	0.02	APHA, 23rd Edition, 3120 B, ICP Method: 2017
12	Nitrate (as NO ₃), mg/l, Max	15.46	20.51	1.16	17.80	0.5	45	APHA, 23rd Edition, UV-Spectrophotometric, 2017
13	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
14	pH value	8	7.7	8.1	7.8	1.0	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric Method
15	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	<0.001	<0.001	<0.001	0.001	0.001	APHA, 23rd Edition, 4-Amino Antipyrine, 2017
16	Selenium (as Se), mg/l, Max	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.01	IS 3025/56:2003 AAS-VGA Method
17	Sulphate (as SO ₄) mg/l, Max	106	111	28	17	2.00	200	APHA, 23rd Edition. Turbidity Method, 2017
18	Total Alkalinity (CaCO ₃), mg/l, Max	208	196	164	256	4.00	200	IS-3025/23:1986,R: 2009, Titration Method
19	Total Arsenic (as As), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA: 1998
20	Total Chromium (as Cr), mg/l, Max	<0.002	<0.002	<0.002	<0.002	0.002	0.05	APHA, 23rd Edition, 3120 B, ICP Method: 2017
21	Total Dissolved Solids, mg/l, Max	466	460	405	512	25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
22	Total Hardness (CaCO ₃), mg/l, Max	324	328	276	376	4.00	200	IS-3025/21:1983, R-2009, EDTA Method
23	Turbidity, NTU, Max	1	1	1	2	1.0	1	IS-3025/10:1984 R-1996, Nephelometric Method
24	Zinc (as Zn), mg/l, Max	<0.005	<0.005	<0.005	<0.005	0.005	5.0	IS 3025 /49: 1994, R : 2009, AAS (Air-Ac-Flame)

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