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**A**  
**REPORT**  
**ON**  
**OF**  
**KULDA OPEN CAST PROJECT**  
**BASUNDHARA AREA**  
**Oct' 2021 to March'2022**

# HALF-YEARLY COMPLIANCE REPORT

(Oct' 2021 to March'2022)

EC Ref No.-

1. J-11015/10/1995-IA-II(M), dt.-14.02.2022
2. J-11015/10/1995-I.A.II(M), dt.- 02.03.2021
3. J-11015/10/1995-I.A.II(M), dt.-10.01.2020
4. J-11015/10/1995-I.A.II(M), dt.-28.03.2019
5. J-11015/10/1995-I.A.II(M), dt.- 22.03.2018

	Condition	Compliance/Action Taken Report	Status
<b>4.</b>	<b>General Condition</b>		
<b>i.</b>	PP shall obtain Consent To Establish/Operate for 19.6 MTPA capacity prior to production.	Consent to Establish was obtained vide no.- 3044/IND-II-CTE-6652, date- 23.02.2022 and Consent to Operate was obtained vide no.- 3139/IND-I-CON-5125, Date- 25.02.2022, from Odisha State Pollution Control Board. Details attached in <b>Annexure-IX</b>	Complied
<b>ii.</b>	PP shall comply as per time bound action plan submitted with 17.59 Crore budget with activities such as sprinkler, fog canon, wheel washing, wind barrier, plantation etc.	The time bound action plan has been attached in <b>Annexure-XXXIII</b> , for your kind information.	Being Complied
<b>iii.</b>	PP shall implement activities listed for plantation of Rs. 24 Crore within 3 years at external dump, backfilled area, safety zone and outside mine lease area.	Sanction Order has been issued to DFO, Sundargarh for an amount of Rs. 4,33,88,269.00/- for the plantation at external dump, backfilled area, safety zone and Rs. 5,70,29,311.50/- for plantation outside mine lease area.	Being complied
<b>iv.</b>	PP to address the issues raised during public hearing with proposed respective budget like development of providing drinking facilities, control blasting, settling the land issues etc.	The issues raised during the public hearing have been addressed in the compliance given in point <b>h.iv.</b>	Complied
<b>v</b>	PP shall implement in-pit conveyor system with silo loading facility till railway siding and no road transportation shall be allowed after December'2022 and accordingly, SPCB shall not grant CTO for road transportation after December'2022.	Coal has been planned to be dispatched through belt from in-pit after commissioning of Barpali loop in 2025-26. However, till commissioning of Barpali loop, as an intermediate arrangement, Coal transportation from Kulda OCP will be done from nearby Sardega railway siding through dedicated Coal corridor of 6-7 km, maximum part of which is passing through area of existing quarry of Basundhara (W) OCP and there is no transportation of coal outside lease area of MCL. Apart from above, a 2 km belt along with RLS is also under construction and the same will be commissioned by March 2023. All control measures with latest available technology have been deployed on this CT road to control the air pollution.	Being Complied

<b>vi</b>	PP shall conduct carrying capacity assessment study within 1 year and submit to Ministry's IRO and further recommendation shall be complied with strict timeline.	Work order has been issued vide no.- MCL/SBP/Env & Forest/22-23/116, date – 16.05.2022, for carrying capacity assessment study of Kulda OCP and Garjanbahal OCP, Basundhara Area as per the respective EC condition.	Being complied
<b>vii</b>	PP shall engage third party independent expert agency for monitoring/auditing of compliance of EC condition every year.	Project Proponent is arranging for third party audit every year, and the report along with its compliance status shall be submitted at the end of the year, with the six-monthly compliance report. However, this condition contradicts with the condition mentioned in point no.- i.(v), where it is mentioned that "Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall carried out.". Hence, this condition needs to be reviewed.	Being complied
<b>viii</b>	PP shall engage dedicated agency for plantation in mine site by April 2022 instead of depending on State Forest Department. PP may seek inputs and expertise from forest department.	Already, Sanction Order has been issued for an amount of Rs. 4,33,88,269.00/- for the plantation at external dump, backfilled area, safety zone in the month of November to DFO, Sundargarh, and work has been started. PP is in regular contact with the DFO, Sundargarh with respect to plantation. Also, PP has developed a plant nursery at the project site, from where plants are being distributed to the nearby villagers, and also the avenue plantation is done by the PP inside the mines.	Complied.
<b>ix</b>	PP should not transportation of coal through road passing through any village and further ensures that its consumers of coal are also not using village road and passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.	PP is not sending coal through road passing through any villages. But it requires ensuring the coal consumers follows the same as stipulated in the respective condition. For this purpose, MCL has already issued a notice vide no. – MCL/GM/BA/M&S/2022-23/140, date – 23.05.2022, to submit a legal undertaking to MCL office. The response from the coal consumers is awaited, once received the same shall be communicated to your good office.	Being complied
<b>x</b>	PP had diverted a State highway so the plantation along the alternative diversion road provided on the top of embankment against Basundhara river and Chattarjhor nallah to be taken by PP along with its proper maintenance. The detail of this alternative road (length, width, carrying capacity in respect to the State Highway) with photographs to be furnished with six monthly compliance	The state highway of Sundargarh-Raigarh has been diverted for mining purpose and a four lane road of length 2700m with concrete road having width 12m and carrying capacity of 45Te – 55Te for HMV and bituminous road having width 8.5m and carrying capacity of 25Te-30Te for LMV has been provided along Basundhara river. Village road to Tumulia has been diverted for mining purpose and a two lane road of length 1995m & width-10m, & carrying capacity of 15Te	Complied

	report of IRO and respective state pollution board.	to 20Te for LMV has been provided along Chattarjhor nallah. The photo of the roads has been attached in <b>Annexure-XXXIV</b>	
<b>xi</b>	PP in collaboration with CMPDI must develop a dedicated laboratory with NABL certification for measuring water quality, soil quality and heavy metals in water, air and soil etc. at its operational place, which would also serve for other nearby mines of M/s MCL.	As on date, CMPDI is taking sample from all the mines of MCL and providing the analysis report after testing the samples at the laboratory in CMPDI, Bhubaneswar. Further, as per the stipulated condition a proposal has been initiated for setting up of laboratory at the operational site, for the analysis of air, water, & soil etc..	Being complied.
<b>xii</b>	PP to develop on more plant nursery with 80% dominance of Sal trees and 20% other trees in 85 Ha scatter patch area located at south west and its detail with photographs to be provided to IRO, MoEF&CC and concerned pollution board in its six monthly compliance report of June 2022.	The patch of 85Ha area located at the south west of the mines was reserved for external OB dump, and presently is unutilized as all the Ob is being dumped in the backfilling area of Kulda OCP. Hence, the land is virgin in nature and presently being used for cultivation of crops by the nearby villagers. But as per the condition, a separate proposal is being made for construction of a temporary nursery in vacant area. The tentative timeline for the construction of the Nursery is 31.12.2022 and shall be communicated to the IRO with the next six monthly compliance report.	Being complied.
<b>xiii</b>	PP also to provide drinking water facilities like installation of RO with proper water supply pipe fittings to nearby rural areas and also to install hand pumps by seeking consent from panchayat of the villages located within study area of 10 km radius buffer zone within one year	Panchayat shall be sought for the requirement of drinking water facility and installation of RO with proper water supply pipe fittings as per the requirement of panchayat officers, BDO, and eventual approval from collector. The work shall be taken up under the CSR of Basundhara Area in 2022-23.	Being complied
<b>xiv</b>	PP to install solar lights within 1 year from the grant of this EC along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10km radius buffer zone within one year.	Solar lights are not feasible in the roads used for transportation of minerals as heavy vehicles ply in these roads. It requires lights of larger capacity for proper illumination at these roads. PP has already installed lights with better illumination in the coal transportation roads. PP has been involved in supply & fixing of Solar Street lights in peripheral villages as per their requirement. Further as per the stipulated condition, PP shall identify the rural areas for installation of solar lights with its maintenance within the study area of 10Km radius buffer zone within one year and the work shall be taken up under the CSR of Basundhara Area in 2022-23.	Being complied
<b>xv</b>	PP to provide bio toilets to the villages located within the study areas within 1 year from the grant of this EC.	As per the stipulated condition the requirement of bio-toilets in the village areas shall be sought from respective village panchayat and the work	Being complied

		shall be taken up under the CSR of Basundhara Area in 2022-23.	
<b>xvi</b>	PP shall deploy only 40-50 tonnes covered trucks/dumper to reduce fleet size till rapid loading system and conveyor belt system is commenced.	<p>At present Tippers of gross weight 25T (10% margin allowed i.e. 28T) are being deployed for Coal Transportation in the mines.</p> <p>Deployment of 40-50T trucks may not be possible as higher capacity trucks comes in the form of trailer trucks and these are unsafe to be used within the mine due to higher gradient and DGMS is not permitting use of tractor - trailer trucks within the mine to avoid accidental resending / roll over in high gradients ( Face to Surface).</p> <p>In addition to that, if lower capacity trucks (25-28T) transport the coal from Face to Surface and then Surface to Surface transportation is taken up by higher capacity i.e. 40-50T trucks, this will involve double loading &amp; unloading and will create additional fugitive dust emission leading to higher pollution level.</p> <p>The specific condition has been requested to be waived off.</p>	Being complied
<b>xvii</b>	PP shall obtain No Objection Certificate (NOC) for extraction of Ground water from Central water authority for expansion capacity.	<p>NoC has been granted by CGWA with validity upto 08-12-2022 vide NoC No.CGWA/NOC/MIN/ORIG/2020/9245 dated 09.12.2020. The approval was obtained in view of the expanded capacity of the mines. The NoC shall be renewed in the period of 2022-23, in view of the future expected expansion capacity of Kulda OCP.</p> <p>Details attached in <b>Annexure-X</b></p>	Complied.
<b>xviii</b>	Adequate effectiveness of EMP should be analyzed from the offset/hike of air pollution data from continuous monitoring stations and quarterly report shall be generated and submitted with six monthly compliance report to RO, MoEF&CC.	<p>The effectiveness of Air quality control measures as mentioned in EMP is being analyzed with the pollution data.</p> <p>Additional air quality control measures have been deployed &amp; additional control measures are in pipeline.</p> <p>Offset/Hike of air pollution data (Oct'21 to Mar'22) from continuous monitoring station is being submitted with 6 monthly compliance report to RO, MoEF&amp;CC for third and fourth quarter. Details has been attached in <b>Annexure-I</b></p>	Being complied
<b>xix</b>	PP to install 1 more continuous air quality monitoring stations at suitable locations preferably village side and with consultation of SPCB. The real time data so generated shall be uploaded on company website. In addition, data	Already one CAAQMS has been installed near the mines as per the earlier stipulated condition. The proposal of installation of 1 more continuous air quality monitoring is being made and shall be installed within 2023-24, at a suitable location in consultation with SPCB. Tender has been floated	Being complied

	should also be displayed digitally at the entry and exit gate of mine lease area for public display.	for procurement of LED display board and is expected to be installed by Sept'2022. The real time data so generated shall be displayed digitally at the entry and exit gate of mine lease area for public display.	
<b>xx</b>	PP shall conduct substantial (at least 50,000 nos.) tree plantation at village namely Teleimal, Tumulia, Chakrapur and Kaletpani within 2 years and mark it for certification for any statutory authorities.	PP's have already issued a letter for identification of land suitable for plantation to DFO, Sundargarh & Tahasildar/Hemgir, Lepripada, Sundargarh. Once identified, plantation shall be taken up by MCL in the available land.	Being complied
<b>xxi</b>	PP shall install fixed fog canon (mist sprayer) all along the haul road till CHP, Railway siding and OB dump area and accordingly sufficient number of fog canons (not less than 10 nos.) with 40m jet length shall be installed within 6 months. It should be ensured that air pollution level confirm to the standards prescribed by the MoEF&CC/CPCB	Fixed sprinkling system has been installed in the haul road near CHP, and towards OB dump area. Further, more numbers of mist sprayers shall be procured for installation at the stipulated locations. PP's have already installed 6 nos. of fog canon at the coal stock and four more fog canon shall be installed after the procurement of fog canons. It is being ensured that the air pollution level confirm to the standards prescribed by the MoEF&CC/CPCB by the existing dust suppression measures like mobile fog canons, water tankers, and static fog canon, & fixed sprinklers.	Being complied
<b>xxii</b>	Project Proponent to plant 1,50,000 nos. of native trees with broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.	PP's have already issued a letter for identification of land suitable for plantation to DFO, Sundargarh & Tahasildar/Hemgir, Lepripada, Sundargarh. Once identified, plantation shall be taken up by MCL in the available land. As a first step, 10Ha has been identified and 80,000 nos. of plants are proposed to be planted using Miyawaki Technique in Subalaya, Sundargarh. Already preparatory works have been started at the site for plantation in the monsoon.	Being complied.
<b>xxiii</b>	Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.	IME/PME is being done for the work force engaged in the mining and pro-active steps are being taken by the PP for preventing any health hazards. PP's are providing regular awareness on the use of PPE's and for monitoring and ensuring surprise visit are being done during the shifts. Details has been attached in <b>Annexure - III</b>	Being complied
<b>xxiv</b>	Project Proponent shall supply drinking water and for domestic purpose for the people coming under the zone of influence of this mining activity.	There is a water treatment facility at Basundhara Area of 1.6MGD capacity. Drinking water is being supplied from this treatment plant to the nearby villages at stipulated times. The details of Drinking water supplied to 17 nos. of peripheral	Complied

		villages in the period of 2021-22 have been attached in the <b>Annexure-XXII</b>	
<b>xxv</b>	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-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measures for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mine activities.	Persons are provided with DGMS approved dust masks and provided with adequate training regularly and at every 5 years interval, occupational health surveillance is being done. Initial medical exam and periodical medical exams are conducted at regular intervals by doctors trained as per ILO guidelines. IME/PME of 309 personnel was carried out in 2021-22. Details attached in <b>Annexure- III</b> 118 personnel were identified as the workforce engaged in active mining operations and were subjected to health check-up for occupational diseases. None of the case reported for Hearing Impairment and Occupational Disease. Further 20% work force has been identified as personnel involved in active mining and are subjected to audio-metry test. The reports in "Form-O", are being maintained by the Safety Department of the Project and shall be produced if required. Further, as per the stipulated condition good occupational environment for mine workers shall be implemented. And preventive measures for burns, malaria and provision of anti-snake venom shall be ensured hereafter.	Being complied
<b>xxvi</b>	Persons of nearby villages shall be given training on livelihood and skill development to make them employable.	Training on sustainable livelihood and skill development to make them employable are being provided MCL-BAIF Comprehensive Community Development Programme" named as 'CCDP-Uthan has been implemented to give training in Cattle development Programme through breeding services, Goat development programme, Backyard poultry farming, Fodder development programme, Agro-Horti* (WADI**) Development Programme & Awareness Creation & Capacity Building Programme <b>Handyman Project</b> - CIPET Bhubaneswar is providing 6- months residential training to the 24 youth . candidates will be imparted basic skills of repair and maintenance of domestic/agricultural pumps, submersible pumps, agricultural tools, tractor driven equipment like tillage, plough, cultivation and sowing equipment. 'Handyman' will be his basic repair-maintenance service provider available at his doorstep. Each	Complied

		candidate will be given a tool kit worth on completion of training. Total project cost is Rs.41 lakhs.	
<b>xxvii</b>	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations 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/night hours.	The project proponent is following the mitigation measures provided in this Ministry's OM No.: Z-11013/5712014-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 the mine lease area'. The illumination and sound at night is prevented by the PP's by eliminating blasting at night, by orienting the mine's flood lights away from the villagers and keeping the noise levels well within the prescribed limits for day/night hours. Regular monitoring is being done for noise and the reports are being submitted to MoEF&CC frequently. Details in <b>Annexure-XXXI</b>	Complied
<b>xxviii</b>	PP shall implement rain water harvesting mechanism in order to recharge the ground water or as water conservation measure in addition to the proposed structure. PP shall carry out regular monitoring of Ground water level and quality.	PP already have mine sump of 15lac cum capacity for harvesting rain water which is being used for various industrial purposes. Further as per the stipulated condition, a new rain water harvesting mechanism as water conservation measure in addition to the proposed structure is being made in the mine lease area of Kulda OCP, for harvesting rain water to utilize it for industrial purpose. The ground water level is being measured at two dug wells & four nos. of piezometers. The monitoring of ground water is being done four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter, as per the EC condition. The qualities of ground water are monitored Yearly once. The data collected is being reported to MoEF&CC with the half yearly compliance report. It can be interpreted that the ground water table around the mine is stable. Report annexed as <b>Annexure-XIX</b>	Complied
<b>xxix</b>	PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per the extent rules or norms.	Till date no agricultural land were found by concerned District Commissioner for any loss due to pollution by Kulda OCP. And it is being assured that, if found and demanded for crop loss, MCL shall fully cooperate and pay for any loss arising due to the pollution caused by Kulda OCP, if any.	Being complied.

xxx	Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India &Ors vide its judgment dated 8 <sup>th</sup> January, 2020 has directed the Union of India to impose a 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 operation, 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 the MoEF&CC.	Noted and Agreed.	Agreed									
<b>4.1</b>												
<b>(a) Statutory Compliance</b>												
i	The project proponent shall obtain forest clearance under the provision of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	Forest Clearance has been obtained for entire forest land area of 227.89Ha vide no.- F.No.- 8-176/1997-FC, Date- 08-08-2007. Refer <b>Annexure-VII</b>	Complied									
ii	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	The said condition is not applicable for Kulda OCP (19.6MTPA), as there is no land expansion required and the mining activity is being carried out in the existing land of 634.205Ha.	Not Applicable									
iii	The project proponent shall prepare a site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendation of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).	There are no Schedule-I species present in the study area, as per the letter from DFO Sundargarh, vide no.- 864/4F(Misc)/2020, date-23.02.2021. Details attached in <b>Annexure-VIII</b> Kulda OCP, has deposited the following amount for the implementation of Regional Wild Life Management Plan (RWLMP) to the Forest Department: <table border="1" data-bbox="824 1654 1385 1856"> <thead> <tr> <th>S.No</th> <th>Amount Paid</th> <th>Date of Payment</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Rs. 2,00,85,000.00/-</td> <td>13.08.2014</td> </tr> <tr> <td>2</td> <td>Rs.2,30,97,750.00/- (Additional amount as per revised rate)</td> <td>04.08.2015</td> </tr> </tbody> </table>	S.No	Amount Paid	Date of Payment	1	Rs. 2,00,85,000.00/-	13.08.2014	2	Rs.2,30,97,750.00/- (Additional amount as per revised rate)	04.08.2015	Complied
S.No	Amount Paid	Date of Payment										
1	Rs. 2,00,85,000.00/-	13.08.2014										
2	Rs.2,30,97,750.00/- (Additional amount as per revised rate)	04.08.2015										
iv	The project proponent shall obtain	Consent to Establish was obtained vide no.-	Complied									

	Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/Committee.	3044/IND-II-CTE-6652, date- 23.02.2022 and Consent to Operate was obtained vide no.- 3139/IND-I-CON-5125, Date- 25.02.2022, from Odisha State Pollution Control Board. Details attached in <b>Annexure-IX</b>	
v	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	NoC has been granted by CGWA with validity upto 08-12-2022 vide NoC No.CGWA/NOC/MIN/ORIG/2020/9245 dated 09.12.2020. Details attached in <b>Annexure-X</b>	Complied
vi	Solid/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.	Hazardous waste authorization was obtained vide no.- IND-IV-HW-1038/3589, date- 14-03.2022, and valid till 31.03.2023, in accordance to the Hazardous and Other Waste Management Rules, 2016. And the mine is operating with compliance to the condition stipulated in the consent. Details attached in <b>Annexure-XI</b>	Complied
<b>(b)</b>	<b>Air quality monitoring and preservation</b>		
i.	Continuous ambient air quality monitoring station as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , and NO <sub>x</sub> , Location of the station shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive target in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring station as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.	Continuous Air Quality Monitoring Stations are established in core as well as buffer zone as mentioned in the condition, in consultation with the RO, SPCB, Odisha, as per the EC Condition. Additionally, 04 routine monitoring stations has been established in consultation with SPCB - External CT Road, West of Working Face, South of Working Face, North of CHP. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr are being done and the reports are being sent to RO, MoEFF&CC, BBSR with half yearly compliance report. Details attached in <b>Annexure-XII</b>	Complied
ii	The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742(E) dated 25 <sup>th</sup> September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr, and other monitoring data	The Ambient Air Quality monitoring in the core zone is being carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. The monitoring reports has been attached at <b>Annexure-XIII</b>	Complied

	shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.		
iii	Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM <sub>10</sub> /PM <sub>2.5</sub> ) such as haul road, loading/unloading and transfer points. Fugitive dust emission from all sources shall be controlled regularly. It shall be ensured that the ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.	The trucks are monitored at the exit gate for Tarpaulin covers. Gate pass is issued only to the trucks having Tarpaulin cover. With the help of Regular Environment Monitoring, It is being ensured that the ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board. The detailed air quality control measure is given in <b>Annexure-IX</b>	Complied
iv	The transportation of coal shall be carried out as per the provision and envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.	Transportation of the coal through the existing road passing through any village has been avoided. Special corridors have been constructed thus bypassing the neighboring villages. Internal Coal Transportation roads have been concreted. Kulda internal: 3.5 kms & Towards Sardega Siding: 6.2 Kms 25 Km four lanes dedicated coal corridor from Duduka to Kanika was completed with an expenditure of 209.40 Crores. A separate coal corridor is presently under construction from Bankibahal to Bedabahal with an estimate of Rs. 486 Crores, and shall be completed by 31.03.2023. Details attached in <b>Annexure-XV</b>	Being Complied
v	Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centers.	It is ensured that the vehicles with valid PUC certificates are only allowed to run in the mine. Records are maintained. Regular Checking of the PUC certificates is done.	Complied
vi	Coal stock pile/crusher/feeder and breaker material transfer point shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated	Coal stocks have been provided with 6nos. of fog canon. There is presently no conveyor system available in mines. The Drills are wet operated and are also fitted with dust extractors. Details attached in <b>Annexure-XVI</b>	Complied

	or fitted with dust extractors.		
<b>vii</b>	Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.	100% of coal is produced by SM technology in the period of 2021-22. The CHP is not in action since December 2017. However, The crusher is provided with 12 mist type nozzles/sprinklers, the belt conveyor with 5 numbers and the bunker with 10 nos. of mist nozzles. Therefore, a total number of 54 mist type nozzles are present in the complete CHP unit.	Complied
<b>(c)</b>	<b>Water quality monitoring and preservation</b>		
<b>i</b>	The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the water Act, 1974 Coal Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.	Kulda Mine is following a zero discharge concept. Workshop effluent is treated in Effluent Treatment Plant with Oil & Grease Trap. Effluent monitoring is done fortnightly. The treated water confirms to the prescribed standard GSR 742 (E) dated 25th September, 2000. Further, the waste water so generated is being collected in mine sump & used for industrial purposes like dust suppression, cooling, plantation and washing. The effluent quality report is enclosed in <b>Annexure-XVII</b>	Complied
<b>ii</b>	The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular no.J-20012/2006-1A.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.	The monitoring data is being uploaded in the company's website: <a href="https://www.mahanadicoal.in">https://www.mahanadicoal.in</a> . The monitoring data is being displayed in LED display board installed at the entrance of mine for public. Details attached in <b>Annexure-XVIII</b>	Complied
<b>iii</b>	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water level shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MoEFCC/RO.	The ground water level is being measured at two dug wells & four nos. of piezometers. The monitoring of ground water is being done four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter, as per the EC condition. The qualities of ground water are monitored Yearly once. The data collected is being reported to MoEF&CC with the half yearly compliance report. It can be interpreted that the ground water table around the mine is stable. Report annexed as <b>Annexure-XIX</b>	Complied
<b>iv</b>	Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and	The surface water quality monitoring is being done in upstream of Basundhara River near Bankibahal Bridge, and downstream of	Complied

	record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.	Basundhara river near Barpali village, six monthly. It is interpreted that there is no change in the quality of Basundhara river water. The records are being submitted to MoEF & CC half yearly. The surface water quality data is attached herewith as <b>Annexure-XX</b>	
v	Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.	Only mine water is used for all industrial purposes. The total run-off generated is being channelized into the mine sump of Kulda OCP, which ultimately leads to ground water recharge.	Complied
vi	Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly settling of silt material. The water so collected in the sump shall be utilized for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.	<ul style="list-style-type: none"> <li>Garland drains (7632m x 1.5m x 1.5m) and Berm (4809m x 1.5m x 1.5m) has been provided all around the mine boundary and External dump.</li> <li>Catch drains (1588m x 1m x 1m) has been provided at coal stocks and internal dump</li> <li>The water so collected in the catch drains is channelized into the mine sump (capacity 15.24 lakh cum) of Kulda OCP, which is further utilized for industrial purposes like dust suppression and fire-fighting, green belt development etc.</li> <li>The drains are cleaned and de-silted pre-monsoon and post-monsoon, annually twice.</li> <li>4.55Ha of External Dump has been reclaimed biologically with the help of DFO, Sundargarh to prevent the soil erosion and flow of silt.</li> <li>The retaining wall constructed at the toe of the external dump for a length of 500m has been designed on the basis of Rainfall data for the past 7 years.</li> <li>Plantation of 25000 nos. has been done over an area of 10 ha at the toe of the external OB Dump and is being monitored till 5 years.</li> </ul> <p>Details has been attached in <b>Annexure-XXI</b></p>	Complied
vii	Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after	The total run-off generated is being channelized into the mine sump of Kulda OCP, which ultimately leads to ground water recharge. There is a water treatment facility at Basundhara Area of 1.6MGD capacity. Drinking water is being	Complied

	due treatment conforming to the specific requirement (standards).	supplied from this treatment plant to the nearby villages at stipulated times. The details of Drinking water supplied to 17 nos. of peripheral villages in the period of 2021-22 have been attached in the <b>Annexure- XXII</b>	
<b>viii</b>	Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP/STP needs to be provided.	ETP of 450KLD capacity has been provided for workshop and the waste water is directed into the mine sump after treatment from the ETP. The oil and grease traps are also in operation and are working efficiently. This is as per the recommendation of ERO, MoEF&CC, Bhubaneswar. The ETP is maintained regularly to maintain its efficiency. Further details are provided in <b>Annexure- XVII</b>	Complied
<b>ix</b>	The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. the drains shall be regularly desilted particularly after monsoon and maintained properly.	The mine seepage water & the mine catchment area water is stored in mine sump/ worked our quarry and is being used for dust suppression, vehicle washing, cleaning of roads, plantation works etc. The break-up of mine water utilization is given in the graph in <b>Annexure-XXIII</b> The drains are cleaned and de-silted pre-monsoon and post-monsoon, annually twice.	Complied
<b>x</b>	The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Gol Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.	The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake, etc., has been prepared and implemented by the project proponent vide plan no.: MCL/BGA/KOCP/SURV-07 dated 16/08/2008. The plan is updated every month as per the progression of the mines. Embankment of 2.7Km has been constructed near Kulda OCP on the banks of Basundhara nallah to prevent sudden rush of water. Stone pitching has been done along the embankment. Plantation of 1350 nos. of plants has been planted at the edge of embankment to prevent soil erosion. Garland drains (7632m x 1.5m x 1.5m) and Berm (4809m x 1.5m x 1.5m) has been provided all around the mine boundary and External dump, to prevent the surface run-off from outside the mine lease area to enter the mines.	Complied
<b>xi</b>	The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and	The riverine/riparian ecosystem management plan is under preparation for Basundhara river and The estimation shall be completed by	Will be Complied

	around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/water resource department in the state government.	31.12.2022. The plan will be implemented as per the direction of irrigation department of Odisha Government.	
<b>(d)</b>	<b>Noise and Vibration monitoring and prevention</b>		
<b>i</b>	Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipment's (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.	Measures taken under Kulda OCP are as follows: All the operators of HEMM (both Departmental and Contractual) have been provided with Ear muffs. 100 ear muffs has been provided in the period of 2021-22. Plantation around mines has been increased significantly. A total of 27350 nos of plants has been planted in the periphery of the mines. 24400 nos. of plants has been proposed to be planted in the period of 2022-23, in an area of 24.40Ha. The Noise Analysis reports are being sent with the six monthly compliance reports. Details attached in Annexure- <b>Annexure-XXIV</b>	Complied
<b>ii</b>	Controlled blasting techniques shall be practiced in order to mitigate ground vibration, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.	Electronic detonator as per DGMS guidelines is being done at Kulda OCP to mitigate ground vibrations and fly rocks. The vibration report has been attached in <b>Annexure-XXV</b>	Complied
<b>iii</b>	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six monthly basis.	Electronic detonator as per DGMS guidelines is being done at Kulda OCP to mitigate ground vibrations and fly rocks. The vibration report has been attached in <b>Annexure-XXV</b>	Complied
<b>(e)</b>	<b>Mining Plan</b>		
<b>i</b>	Mining shall be carried out under strict adherence to provision of the Mines Act 1952 and subordinate legislation made there-under as applicable.	Mining is being carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.	Complied
<b>ii</b>	Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).	Mining is being carried out complying to the provisions of the Mining Laws & related to mining & relevant DGMS circular. Mining is carried out as per the approved mining plan.	Complied
<b>iii</b>	No mining shall be carried out in forest land without obtaining Forest Clearance	Forest Clearance was obtained vide no.-F.No.-8-176/1997-FC, for an area 227.89Ha. Mining is	Complied

	as per Forest (Conservation) Act, 1980.	being done in the diverted forest land only.	
<b>iv</b>	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.	<p>Actions have been taken to reduce energy consumption by conservation, efficiency and use of renewable energy.</p> <p>11.94% of energy has been saved in the period of 2020-21 (5480700.00 Unit) as compared to the consumption in the period of 2021-22 (6516770Unit) with respect to the production enhancement from 16.8MTPA to 19.6MTPA.</p> <p>Practice of Installation of LED lights by replacing Halogen bulbs is being done as a measure to conserve energy. All the Halogen bulbs has been replaced by LED bulbs. 700nos. LED bulbs has been installed in the period of 2021-22</p> <p>16 KVA solar plant has been setup at area administrative buildings.</p> <p>Procurement of 20 Solar Light sets of 1KWatt each is under process and shall be completed by 31.12.2022.</p>	Complied
<b>(f)</b>	Land reclamation		
<b>i</b>	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MoEFCC) from time to time shall be submitted to MoEFCC/Regional Office (RO).	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey has been carried out and the reports are uploaded on the company website <a href="https://www.mahanadicoal.in">https://www.mahanadicoal.in</a> . Details attached in <b>Annexure-XXVI</b>	Complied
<b>ii</b>	The final mine void depth should preferably be as the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.	<p>It is an operating mine and still 05 years life of the mine is left.</p> <p>Agreed to comply at the closure stage of mine.</p> <p>(Data as on 31.03.2022)</p> <p>a. Total excavated area: 266.45 Ha</p> <p>b. Backfilled Area: 125.50 Ha</p> <p>c. Mine Sump Area: 13.70 Ha</p>	Agreed to Comply
<b>iii</b>	The entire excavated area, backfilling,	Progressive compliance status is submitted and	Complied

	external OB dumping (including top soil) and aforesation plan shall be in conformity with the “during mining”/“post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-à-vis the post mining land use pattern shall be submitted to the MoEFCC/RO.	will be submitted to the Ministry of Environment, Forest and Climate Change/Regional Office on six monthly-basis. The satellite based land use data has been provided in <b>Annexure- XXVI</b>	
<b>iv</b>	Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provision contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from flue gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC and SPCB.	As per the approved Mining Plan, the total OB generated is being dumped in the internal dump; hence, the void is not available for dumping of fly ash.	Not Applicable
<b>v</b>	Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept utilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilized with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and managements of rehabilitated areas shall continue the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.	196798.95m <sup>3</sup> of top soil has been spread on the top of the internal dump as well as external dump. 5750 nos. of plants has been planted in the internal dump in the period of 2019-20. Apart from this, 480.00cum. has been stacked separately in front of Kulda Nursery in the period of 2019-20. Plantation by Miyawaki technique is being carried out in year 2022-23. A dump was created near the lalma region in year 2018 where leguminous plants and grassing was done. The dump height was 1m and approximately 1895.00 cum. of top soil was stacked separately. After one year it was used for technical reclamation of external OB dump. The total top soil produced during the period of 2019-20 was 15808.95cum. and in the period of 2020-21 is 149730.00cum.,and in the period of 2021-22 28560.00cum, which has been to blanket the internal Dump as well as external Dump as a part of technical reclamation. In the period of 2019-20 an area of 3.2Ha and in the period 2020-21, an area of 5.45Ha of External and Internal Dump has been biologically reclaimed under the supervision of DFO, Sundargarh. The vegetation	Complied

		shall be monitored for five years from the year of plantation by the Forest officials jointly with MCL officials. The compliance status is being sent to MoEF&CC periodically as per the EC Condition. Details attached in <b>Annexure-XXVII</b>													
<b>vi</b>	The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the state government to provide alternate area for livestock grazing, if any. In this context, the project proponents shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.	Not Applicable as, no grazing land is involved in core zone. Hence the point is not applicable for Kulda OCP, Basundhara Area.  <table border="1"> <thead> <tr> <th>Forest</th> <th>Agriculture land</th> <th>Waste Land</th> <th>Surface water bodies</th> <th>Grazing</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>227.89</td> <td>259.794</td> <td>146.521</td> <td>0</td> <td>0</td> <td>634.205</td> </tr> </tbody> </table>	Forest	Agriculture land	Waste Land	Surface water bodies	Grazing	Total	227.89	259.794	146.521	0	0	634.205	Not Applicable
Forest	Agriculture land	Waste Land	Surface water bodies	Grazing	Total										
227.89	259.794	146.521	0	0	634.205										
<b>(g)</b>	Green Belt														
<b>i</b>	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.	Forester and Range Officer of DFO, Sundargarh division is in regular contact with this mine. If any precautionary measure is to be taken, it shall be done under the guidance of Forest Department, Sundargarh.  For implementation of Regional Wild Life Management Plan (RWLMP) Kulda OCP has deposited fund to the Forest Department:  <table border="1"> <thead> <tr> <th>S. No</th> <th>Amount Paid</th> <th>Date of Payment</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Rs. 2,00,85,000.00/-</td> <td>13.08.2014</td> </tr> <tr> <td>2</td> <td>Rs. 2,30,97,750.00/- (Additional amount as per revised rate)</td> <td>04.08.2015</td> </tr> </tbody> </table>	S. No	Amount Paid	Date of Payment	1	Rs. 2,00,85,000.00/-	13.08.2014	2	Rs. 2,30,97,750.00/- (Additional amount as per revised rate)	04.08.2015	Complied			
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2	Rs. 2,30,97,750.00/- (Additional amount as per revised rate)	04.08.2015													
<b>ii</b>	Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/coal transportation roads.	The details of plantation in and around the mine area are as follows:  <table border="1"> <thead> <tr> <th>S.No</th> <th>Location</th> <th>Plantation Since Inception</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Northern Side of the mines</td> <td>Plantation of around 28204nos of plants has been done</td> </tr> <tr> <td>2</td> <td>Southern Side of the mines</td> <td>Plantation of Dense Lalma Reserve Forest is present</td> </tr> <tr> <td>3</td> <td>Western Side of the mines</td> <td>1.1Ha of plantation has been done in the boundary of Garjanbahal OCP and Kulda OCP</td> </tr> </tbody> </table>	S.No	Location	Plantation Since Inception	1	Northern Side of the mines	Plantation of around 28204nos of plants has been done	2	Southern Side of the mines	Plantation of Dense Lalma Reserve Forest is present	3	Western Side of the mines	1.1Ha of plantation has been done in the boundary of Garjanbahal OCP and Kulda OCP	Complied
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3	Western Side of the mines	1.1Ha of plantation has been done in the boundary of Garjanbahal OCP and Kulda OCP													

		4	Eastern Side of the mines	2.7Km of avenue plantation has been done in the period of 2020-21	
		In the South Western side of the mines, Garjanbahal OCP is situated. The boundary between both the mines has been provided with avenue plantation.			
<b>(h)</b>	<b>Public hearing and Human health issues</b>				
<b>i</b>	Adequate illumination shall be ensured in all mine location (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.	Adequate illumination has been ensured in all mine locations (as per DGMS standards) and monitored weekly. Corrective steps taken after the inspection by ERO, to improve the illumination under Kulda OCP: 1. Lighting along Haul road. 2. Installation of lighting DG at the working area. The report on the same has been attached herewith as <b>Annexure-XXIX</b>			Complied
<b>ii</b>	The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.	Persons are provided with DGMS approved dust masks and provided with adequate training regularly and at every 5 years interval, occupational health surveillance is being done. Initial medical exam and periodical medical exams are conducted at regular intervals by doctors trained as per ILO guidelines. PME of 317 personnel was carried out in 2021-22. 118 personnel were identified as the workforce engaged in active mining operations and were subjected to health check-up for occupational diseases. None of the case reported for Hearing Impairment and Occupational Disease. Further 20% work force has been identified as personnel involved in active mining and are subjected to audio-metry test. The reports in "Form-O", are being maintained by the Safety Department of the Project and shall be produced if required.			Complied
<b>iii</b>	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	All personnel working in core zone are provided with N95 dust masks and training is provided to both departmental as well as contractual employees on safety and health aspects.			
<b>iv</b>	Implementation of the action plan on	The issues raised in the public hearing has been			Being

	the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the task/measures as per the action plan submitted with budgetary provisions during the public hearing Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.	addressed and monitored periodically. The pollution level (for both air and water) is maintained well within limits. Drinking water is being supplied to the nearby villages. The compliance status of Public Hearing is provided separately in <b>Annexure-XXX</b>	Complied
v	The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'impact of mining activities on habitations-issues related to the mining projects wherein habitations and village are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.	The project proponent is following the mitigation measures provided in this Ministry's OM No.: Z-11013/5712014-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 the mine lease area'. Details in <b>Annexure-XXXI</b>	Complied
<b>(i)</b>	<b>Corporate Environment Responsibility</b>		
i	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.	The company has a well laid environment policy, i.e. CIL Corporate Environment Policy 2012. This Corporate Environment Policy is reviewed in every 5 year. Board meeting is being conducted for this purpose. Besides this Inter Area Environmental Audit is being conducted in every quarter. The audit committee reviews all the compliance of the condition lain in the Environmental as well as Forest Clearance. The report is submitted to the company HQ, for final scrutiny.	Complied
iii	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control senior Executive, who will directly to the head of the organization.	Environment management cell has been established in Project as well as at area and head quarter level. The details of which are uploaded in the company's website <a href="https://www.mahanadicoal.in">https://www.mahanadicoal.in</a>	Complied
iv	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any	A separate ESCROW account has been maintained for progressive and final mine closure activities. The year wise funds earmarked for environmental protection measures are duly kept in separate account and are not diverted for any other purpose. The year-wise expenditure (for past three years)	Complied

	<p>other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.</p>	<p>under Environment head with respect to Kulda OCP is as follows:</p> <table border="1" data-bbox="824 331 1385 594"> <thead> <tr> <th colspan="4">Environmental Expenditure with respect to Kulda OCP</th> </tr> <tr> <th>S.No</th> <th>Period</th> <th>Capital Nature</th> <th>Revenue Nature</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2019-20</td> <td>1.24Cr</td> <td>4.59Cr</td> </tr> <tr> <td>2</td> <td>2020-21</td> <td>0.50Cr</td> <td>5.16Cr</td> </tr> <tr> <td>3</td> <td>2021-22</td> <td>0.71Cr</td> <td>4.74 Cr</td> </tr> </tbody> </table> <p>The progress of implementation of action plan is being reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.</p>	Environmental Expenditure with respect to Kulda OCP				S.No	Period	Capital Nature	Revenue Nature	1	2019-20	1.24Cr	4.59Cr	2	2020-21	0.50Cr	5.16Cr	3	2021-22	0.71Cr	4.74 Cr	
Environmental Expenditure with respect to Kulda OCP																							
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1	2019-20	1.24Cr	4.59Cr																				
2	2020-21	0.50Cr	5.16Cr																				
3	2021-22	0.71Cr	4.74 Cr																				
<b>v</b>	<p>Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall carried out.</p>	<p>Inter Area Environmental Audit is being conducted in every quarter. The audit committee reviews all the compliance of the condition laid in the Environmental as well as Forest Clearance. The report is submitted to the company HQ, for final scrutiny.</p> <p>Third party assessment of EC Compliance was done by NEERI and the report submitted on 09-04-2021.</p>	Complied																				
<b>(j)</b>	<b>Miscellaneous</b>																						
<b>i</b>	<p>The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.</p>	<p>The project proponent has advertised in two local newspapers namely New Indian Express on 16.03.2022 and the Samaja on 16.03.2022</p>	Complied																				
<b>ii</b>	<p>The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.</p>	<p>A copy of the environmental clearance has been sent to the concerned State Pollution Control Board, Regional Office, District Industry Sector and Collector's Office/Tahsildar Office for information in public domain within 30 days. The consignment numbers are as follows for your kind perusal.</p> <ul style="list-style-type: none"> <li>• State Pollution Control Board: RO095549435IN</li> <li>• The Collector's Office: RO095549458IN</li> <li>• The Sarpanch, Balinga: RO095549427IN</li> </ul>	Complied																				

		<ul style="list-style-type: none"> <li>The Sarpanch Tumulia: RO095549444IN</li> <li>District Industry Officer: RO095549413IN</li> </ul>	
iii	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including result of monitored data on their website and update the same on half-yearly basis.	The compliance status is being uploaded on half-yearly basis, in the company's website: <a href="https://www.mahanadicoal.in">https://www.mahanadicoal.in</a>	Complied
iv	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx, (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.	The monitoring reports are being uploaded in the website <a href="https://www.mahanadicoal.in">https://www.mahanadicoal.in</a> and displayed in LED Display Board in front of the project for public.	Complied
v	The project proponent shall submit six-monthly report on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Agreed.	Agreed
vi	The project proponent shall follow the mitigation measures provided in this Ministry's OM No. Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and village are surrounded by the mine lease area'.	The project proponent is following the mitigation measures provided in this Ministry's OM No.: Z-11013/5712014-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 the mine lease area'. Details in <b>Annexure-XXXI</b>	Complied
vii	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and on the website of the company.	The Environmental Statement in Form-V has been submitted to the State Pollution Control board, Odisha vide letter no.- MCL/HQ/E&F/2021/65, Dt.- 21.09.2021. The Form-V has also been mailed to concerned ERO, MoEF & CC, BBSR via mail on 25 <sup>th</sup> Sept 2021.	Complied
viii	The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.	The commencement of mining operation as per the CTO issued vide no.- 3139/IND-I-CON-5125, Date- 25.02.2022, by Odisha State Pollution Control Board.	Complied
ix	The project authorities must strictly adhere to the stipulations made by the	Agreed.	Agreed

	State Pollution Control Board and the State Government.		
<b>X</b>	The project authority shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Agreed.	Agreed
<b>xi</b>	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of environmental, Forests and Climate Change.	Agreed.	Agreed
<b>xii</b>	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.	Agreed
<b>xiii</b>	The Ministry may revoke or suspend the clearance, if implementation of the above conditions is not satisfactory.	Agreed.	Agreed
<b>xiv</b>	The Ministry reserves the right to stipulated additional if found necessary. The company in a time bound manner shall implement these conditions.	Agreed.	Agreed
<b>xv</b>	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authority should extent full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Noted and Agreed.	Agreed
<b>xvi</b>	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules made their under and any other Court of Law relating to the subject matter.	Noted and Agreed.	Agreed

5.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report as well as during presentation to the EAC. All the commitments made on the issued raised during public hearing shall also be implemented by the EC in letter and spirit.	Noted and Agreed.	Agreed
6.	The proponent shall obtain all necessary clearance/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulated any further condition for environmental protection.	All the required Consent from the State Government has been taken before the commencement of mining operation.	Complied
7.	Any appeal against this Environment Clearance (EC) shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted and Agreed.	Agreed
8.	The coal company/project proponent shall be liable to pay the compensation against illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others.	Noted and Agreed.	Agreed
9.	The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble Supreme Court.	Noted and Agreed.	Agreed
10.	This Environment Clearance (EC) shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.	Noted and Agreed.	Agreed

11.	All the conditions stipulated in Environment Clearance vide Ministry's letter No. J-11015/10/95-IA.II(M) dated 24th December, 2002, 22nd March, 2018, 28th March, 2019, 10th January, 2020 and 2nd March, 2021.	Noted and Agreed.	Agreed
-----END-----			

  
**Project Officer,  
Kulda OCP,  
MCL, Basundhara Area**

CAAQMS at Gopalpur CMPDI camp



CAAQMS at Jagannath temple Tiklipara village



CAAQMS at Nursingpur



**Kulda OCP\_CAAQMS Monitoring Report  
(Nursingpur Station) from Oct'21 to Mar'22 (all units in ug/m3)**

Date	PM2.5	PM10	SPM	NOx	SO2	CO
2021-10-01	NA	NA	NA	NA	NA	NA
2021-10-02	NA	36.63	74.56	8.81	22.6	0.79
2021-10-03	NA	NA	NA	NA	NA	NA
2021-10-04	NA	37.6	106.07	6.9	16.3	0.81
2021-10-05	12.47	28.6	58.35	8.79	15.09	0.89
2021-10-06	13.77	45.41	91.01	7.97	11.33	0.59
2021-10-07	19.64	98.93	197.68	7.44	10.73	0.9
2021-10-08	19.78	108.74	216.76	8.28	8.8	0.72
2021-10-09	14.27	52.72	106.22	7.82	8.74	0.69
2021-10-10	14.95	62.83	126.43	8.4	8.88	0.79
2021-10-11	17.66	58.22	116.87	8.17	8.24	0.7
2021-10-12	18.82	64.01	128.81	9.26	10.38	0.69
2021-10-13	18.65	61.84	123.69	8.89	10.22	0.78
2021-10-14	19.88	71.12	142.37	8.62	11.27	0.75
2021-10-15	11.84	36.29	73.12	8.11	10.69	0.6
2021-10-16	10.59	33.09	65.87	9.02	10.02	0.58
2021-10-17	7.18	10.85	21.97	8.86	9.71	0.5
2021-10-18	12.78	37.92	76.07	8.82	8.63	0.66
2021-10-19	8.18	32.98	67.1	7.84	9.55	0.88
2021-10-20	7.63	16.88	34.55	5.83	12.93	0.56
2021-10-21	1.86	32.19	63.78	6.49	14.88	0.73
2021-10-22	10.84	68.87	138.54	6.92	16.88	1.53
2021-10-23	9.98	35.18	70.28	6.54	16.34	1
2021-10-24	12.3	40.97	82.26	8.25	15.51	0.81
2021-10-25	15.5	53.07	96.73	8.85	14.81	0.9
2021-10-26	13.93	62.79	95.06	6.64	13.91	1.01
2021-10-27	15.37	59.94	89.54	9.82	14.88	0.88
2021-10-28	11.13	44.67	67.44	10.48	14.32	0.68
2021-10-29	26.93	65.92	98.79	11.77	13.85	0.84
2021-10-30	35.87	62.52	94.34	12.56	13.18	1.12
2021-10-31	42.15	71.44	107.68	13.17	14.21	1.05
2021-11-01	49.7	77.87	117.7	8.25	15.76	1.11
2021-11-02	49.2	81.32	122.56	5.65	15.22	0.9
2021-11-03	55.37	86.14	129.58	5.62	15.01	0.94
2021-11-04	57.96	89.87	135.21	5.68	15.39	1.02
2021-11-05	47.42	76.15	114.09	5.66	16.25	1.5
2021-11-06	33.57	58.01	86.8	3.92	17.33	1.34

2021-11-07	30.8	52.55	79	0	16.7	1.12
2021-11-08	65.76	117.17	175.61	0.96	16.54	2.12
2021-11-09	70.43	125.56	193.64	7.72	18.23	1.71
2021-11-10	55.46	88.2	142.34	17.85	15.55	1.44
2021-11-11	56.27	93.86	151.52	33.13	16.83	1.45
2021-11-12	46.69	76.89	125.37	26.79	16.45	1.15
2021-11-13	32.97	47.67	76.85	15.04	15.77	0.74
2021-11-14	23.46	32.49	52.11	13.06	15.02	0.87
2021-11-15	17.26	21.12	34.79	13.89	15.62	0.75
2021-11-16	38.59	58.08	94.53	14.32	16.21	0.97
2021-11-17	47.7	70.93	114.94	14.46	17.42	1.62
2021-11-18	44.75	69.53	113.6	14.86	17.76	1.35
2021-11-19	39.72	65.06	105.16	15.12	18.14	1.16
2021-11-20	42.21	61.49	99.44	15.35	19.81	0.9
2021-11-21	41.83	64.51	104.47	15.61	18.66	0.86
2021-11-22	45.36	69.91	113.56	15.73	18.06	1.03
2021-11-23	42.04	63.08	102.24	15.77	18.95	1.08
2021-11-24	47.59	69.06	111.77	15.87	20.97	1.25
2021-11-25	40.89	71.97	116.76	16.01	22.74	1.13
2021-11-26	20.62	66.33	107.47	16.05	20.98	1.01
2021-11-27	22.06	56.81	91.82	16.41	24.83	1.48
2021-11-28	23.9	56.5	91.41	16.64	23.52	1.66
2021-11-29	24.21	57.99	94.24	16.64	23.47	1.22
2021-11-30	37.92	78.93	137.12	16.72	22.81	1.9
2021-12-01	32.11	65.65	120.96	16.79	23.81	1.53
2021-12-02	24.93	51.1	94.04	16.89	25.21	1.2
2021-12-03	29.72	62.29	100.09	16.93	27.1	1.54
2021-12-04	26.19	55.74	87.06	17.28	31.57	1.07
2021-12-05	NA	NA	NA	NA	NA	NA
2021-12-06	9.94	25.73	44.65	10.71	22.24	0.1
2021-12-07	15.66	41.87	76.14	14.86	21.16	0.31
2021-12-08	20.92	56.58	103.34	18.03	19.22	0.61
2021-12-09	21.24	66.06	121.35	18.17	18.97	0.61
2021-12-10	13.03	43.45	79.77	18.26	19.38	0.48
2021-12-11	16.32	48.7	88.86	18.34	19.86	0.71
2021-12-12	25.31	75.92	139.8	18.41	20.65	0.72
2021-12-13	25.17	74.74	136.76	18.52	22.71	0.89
2021-12-14	22.36	61	112.84	18.5	19.77	0.53
2021-12-15	24.14	75.66	139	18.48	20.99	1.45
2021-12-16	28.09	58.71	107.55	18.59	18.15	0.71
2021-12-17	51.51	75.35	137.62	18.62	18.28	1.15

2021-12-18	40.73	62.2	113.51	18.74	21.93	0.69
2021-12-19	52.66	75.75	139.27	18.8	25.08	2.1
2021-12-20	39.97	59.2	108.51	NA	23.75	NA
2021-12-21	50.19	76.2	139.8	NA	32.12	NA
2021-12-22	45.43	64.98	119.64	NA	25.79	NA
2021-12-23	51.49	74.89	136.45	NA	23.42	NA
2021-12-24	61.04	91.97	168.15	NA	30.17	NA
2021-12-25	72.68	108.31	198.36	NA	30.41	NA
2021-12-26	69.37	108.43	198.56	NA	25.68	NA
2021-12-27	67.72	101.28	185.26	NA	25.99	NA
2021-12-28	63.77	98.78	168.06	20.35	33.02	0.63
2021-12-29	11.32	15.4	20.2	19.56	23.85	0.83
2021-12-30	20.98	33.65	44.61	19.46	25.4	0.18
2021-12-31	23.3	67.07	88.35	19.63	26.47	0.7
2022-01-01	24	72.95	95.74	19.62	27.38	1.18
2022-01-02	18.79	61.29	80.58	19.57	25.89	1.08
2022-01-03	21.32	68.94	90.24	19.61	25.77	0.89
2022-01-04	27.77	56.14	75.95	19.66	29.57	0.99
2022-01-05	36.01	41.07	61.82	19.72	48.31	1.06
2022-01-06	34.45	39.14	58.92	19.82	23.84	1.02
2022-01-07	31.03	34.93	52.55	19.9	0	0.8
2022-01-08	35.36	40.22	60.48	19.95	0.43	1.16
2022-01-09	35.35	40.26	60.62	19.92	2.52	0.98
2022-01-10	28.76	32.51	48.94	20.06	0.3	0.77
2022-01-11	25.1	27.54	41.54	35.46	0	1.05
2022-01-12	16.88	18.45	28.05	20.05	0	0.52
2022-01-13	16.2	17.93	27.42	20.03	0	0.46
2022-01-14	20.72	23.12	34.77	20.09	0	0.66
2022-01-15	13.7	14.58	22.19	29.03	0	0.41
2022-01-16	22.88	25.6	38.62	20.07	0	1
2022-01-17	26.26	30.23	44.47	20.11	2.23	1.08
2022-01-18	24.84	30.01	41.94	19.99	2.67	1.02
2022-01-19	31.04	38.13	52.97	19.96	3.57	1.07
2022-01-20	31.89	39.06	54.46	19.89	1.87	1.17
2022-01-21	31.33	38.61	53.66	19.97	1.49	1.04
2022-01-22	36.65	45.26	62.74	20.02	3.13	1.92
2022-01-23	26.75	32.75	45.51	20.15	0	0.7
2022-01-24	26.23	31.93	44.22	20.28	2.4	0.59
2022-01-25	29.8	36.52	50.69	20.3	0	1.21
2022-01-26	33.18	40.8	56.62	20.37	0.38	0.94
2022-01-27	27.91	34.24	47.59	20.3	2.12	1.13

2022-01-28	24.79	30.8	41.91	20.33	10.91	0.63
2022-01-29	28.22	35.79	47.78	20.32	18.04	0.95
2022-01-30	22.97	29.25	39.03	20.24	16.84	0.69
2022-01-31	36.81	47.13	62.95	20.29	15.19	1.3
2022-02-01	28.61	36.38	48.78	20.5	12.62	1.19
2022-02-02	28.53	36.48	48.78	20.51	15.87	0.47
2022-02-03	28.68	36.45	48.87	20.47	10.25	0.03
2022-02-04	21.72	27.36	36.61	20.56	12.32	0.07
2022-02-05	22.04	27.68	37.11	20.57	7.42	0.01
2022-02-06	24.28	30.72	41.12	20.6	16.95	0.41
2022-02-07	24.08	30.35	40.72	20.6	12.97	0.22
2022-02-08	27.76	35.32	47.25	20.62	9.64	0.24
2022-02-09	26.12	33.04	44.16	20.62	13.6	0.07
2022-02-10	29.39	37.44	49.88	20.87	14.49	0.18
2022-02-11	27.8	35.48	47.4	20.8	17.6	0.17
2022-02-12	21.26	26.79	35.83	20.61	6.45	0.5
2022-02-13	22.11	27.71	37.01	20.59	7.08	0.89
2022-02-14	27.91	35.45	47.35	20.62	12.7	0.51
2022-02-15	27.84	35.51	47.2	20.67	11.78	0.39
2022-02-16	29	36.95	49.28	20.64	17.59	0.68
2022-02-17	32.13	41.89	55.97	27.64	9.44	0.62
2022-02-18	28.53	36.19	49.66	20.6	8.85	0.46
2022-02-19	24.78	31.42	44.25	20.63	15.86	0.54
2022-02-20	27.14	34.53	48.68	20.57	16.06	0.34
2022-02-21	23.5	29.8	42.04	20.58	16.61	0.43
2022-02-22	25.72	32.59	46.05	20.77	9.48	0.55
2022-02-23	32.88	42.03	59.45	20.9	12.59	0.37
2022-02-24	41.28	53.1	74.96	20.95	12.26	0.75
2022-02-25	36.08	45.98	64.97	20.98	13.79	0.22
2022-02-26	48.09	62.11	87.6	21.06	12.81	1.04
2022-02-27	23.03	29.11	41.03	21.07	9.63	0.24
2022-02-28	32.92	42.15	59.41	21.04	11.16	0.36
2022-03-01	39.65	50.93	71.77	21.04	12.13	0.48
2022-03-02	38.93	49.95	70.49	21	10.15	0.35
2022-03-03	46.09	59.69	83.98	20.74	7.91	1.16
2022-03-04	54.61	70.72	99.82	20.73	9.92	1.4
2022-03-05	56.79	73.81	103.78	20.66	9.45	0.8
2022-03-06	43.26	55.79	78.72	20.7	10.62	0.69
2022-03-07	45.16	58.18	81.92	20.77	15.11	0.69
2022-03-08	44.14	56.84	80.08	20.72	11.94	0.98
2022-03-09	28.94	36.69	51.81	20.72	16.42	1.49

2022-03-10	29.77	37.95	53.46	20.72	14.8	1.09
2022-03-11	30.74	39.26	55.43	20.73	11.1	0.71
2022-03-12	35.35	45.45	64.05	20.69	17.24	1.29
2022-03-13	33.42	42.74	60.29	20.73	16.54	1.27
2022-03-14	33	42.05	59.29	25.09	21.84	1.16
2022-03-15	37.65	48.33	68.05	20.63	19.73	2.9
2022-03-16	40.02	51.51	72.62	20.71	11.65	1.17
2022-03-17	33.84	43.4	61.15	20.57	0.62	1.45
2022-03-18	24.52	31.1	43.98	20.62	0	0.61
2022-03-19	25.71	32.54	46	20.62	0.21	0.67
2022-03-20	39.65	50.95	71.79	21.84	19.83	1.03
2022-03-21	50.92	63.82	92.63	23.32	31.49	1
2022-03-22	58.65	71.06	106.82	21.64	18.74	1.34
2022-03-23	39.07	48.37	70.77	10.82	0	1.98
2022-03-24	51.93	64.6	94.63	10.7	0	2.48
2022-03-25	51.27	63.76	93.45	11.78	0.59	1.6
2022-03-26	36.26	44.76	65.55	13.57	0	0.12
2022-03-27	36.54	45.1	66.08	13.82	0	0.49
2022-03-28	62.48	80.81	118.47	23.08	0.09	0.99
2022-03-29	55.22	68.61	100.31	13.25	7.82	0.91
2022-03-30	51.7	64.27	94.32	12.95	11.8	1.18
2022-03-31	44.88	55.65	81.58	12.94	8.51	1.47

## STONE PITCHING AT THE EMBANKMENT OF CHATTANJHOR NALLAH



Flow Rate of Chattanjhor Nallah		
S.No.	Date of Measurement	Flow Rate (m <sup>3</sup> /s)
1	05.10.2021	0.26
2	09.10.2021	0.21
3	21.10.2021	0.20
4	30.10.2021	0.25
5	12.11.2021	0.24
6	27.11.2021	0.25
7	06.12.2021	0.20
8	13.12.2021	0.24
9	25.12.2021	0.22
10	30.12.2021	0.20
11	15.01.2022	0.19
12	21.01.2022	0.16
13	31.01.2022	0.18
14	08.02.2022	0.18
15	19.02.2022	0.14
16	29.02.2022	0.16
17	10.03.2022	0.10
18	19.03.2022	0.05
19	28.03.2022	0.04

LIST OF PPE'S DISTRIBUTED UNDER KULDA OCP			
S.No.	Details of PPE	2020-21(nos.)	2021-22(nos.)
1	Helmet	100	198
2	Mast	500	1000
3	Gumboot	100	140
4	Water bottles	119	145
5	Mining Shoes	500	210
6	Ear Muff	23	20
7	Towel	159	290
8	First aid kit	15	100
9	First aid station	02	08

**DETAILS OF IME/PME BEING DONE UNDER KULDA OCP FOR THE PAST FIVE YEARS**

IME Details of Kulda OCP		
2017	393	393
2018	242	242
2019	428	428
2020	118	118
2021	249	249

PME details of Kulda OCP		
2017	58	58
2018	55	55
2020	55	58
2021	60	68

**Safety awareness given to all the members before shift hours** 



**1<sup>st</sup> Shift**



**2<sup>nd</sup> shift Shift**



**3<sup>rd</sup> shift Shift**

## Skill Development Program



### IMPROVED VEGETABLE CULTIVATION



## Skill Development Program



### Trellis Cultivation





**Skill Development Program**

**Kitchen Garden**





**Skill Development Program**



**Drugged AI service delivery at the livestock aid centres**

**Doorstep service delivery through project**

## Skill Development Program



### GOA AND CATTLE AI UNDER CCDP



AI IN GOAT



AI IN CATTLE

## Skill Development Program

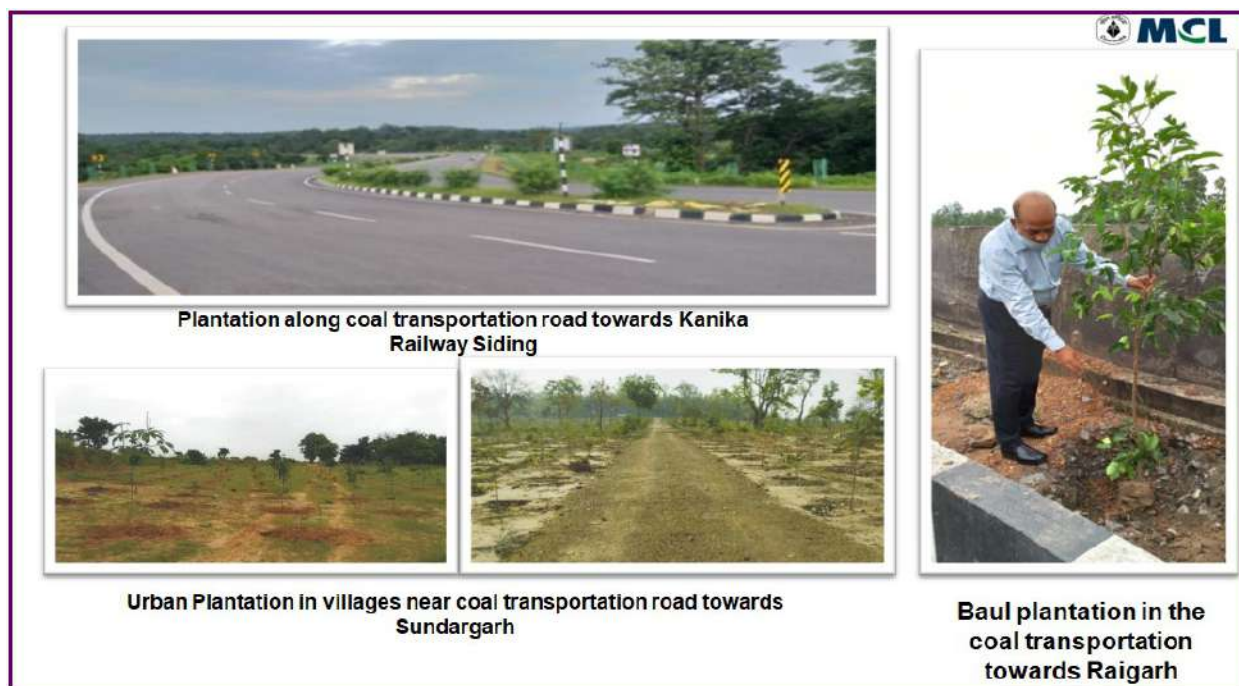


Low productive ND Cow presently owned by majority farmers



Expected high pedigree progenies






Plantation Record since inception w.r.t. Kulda OCP, Basundhara Area, MCL							
Year of Plantation	Species Planted	Site of Plantation	Block/Avenue	Spacing	Height attained	Total area covered	Survival
2005-06	134000 trees	Safety Zone	Block	2.00m x 2.00m	6-7 mtrs	53.6 Ha	86.37%
2009-10	2876 trees	Near CHP & Vacant Area	Block	2.00m x 2.00m	6-7 mtrs	0.93 ha	90%
2010-11	7500 trees	External OB Dump	Block	2.00m x 2.00m	4-5 Mtr	5 Ha	0.00%
2011-12	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2012-13	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2013-14	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2014-15	600 trees (Road Sides—Chatuan)	Vacant Area	Avenue	2.00m x 2.00m	3 mtr	1.5Rkm	73.50%


	200 trees – Embankment 1400 trees – Distributed to nearby villages						
<b>2015-16</b>	1000 trees on road side (Chatuan, gulmohar, karanj)	Road Side	Avenue	1.00m x 1.00m	2 mtr	1.8Rk m	96%
<b>2016-17</b>	460 nos - Gulmohar , karanj	Road Side	Avenue	1.00m x 1.00m	2 mtr	1.2Rk m	100%
<b>2017-18</b>	544 trees (jackfruit, neem, bamboo, karanj, ashoka)	Road Side	Avenue	1.00m x 1.00m	1.5 mtr	1.5Rk m	60%
<b>2018-19</b>	25000 trees (karanj, gombher, chakunda, neem, gulmohar, mango, jackfruit, Arjun, siresh,)	Near External OB Dump	Block	2.00m x 2.00m	1 mtr	10 ha	100%
<b>2019-20</b>	8000trees (karanj, gombher, Jamun, Bengium, neem, gulmohar, mango,	Internal Dump and In External OB Dump	Block	2.00m x 2.00m	1 mtr	3.2ha	100%

	jackfruit, Arjun, siresh,						
	400 Trees (Ashoka, Gombher, Neem)	In front of Kulda Project Office	Avenue	2mtr	1m	1Km	100%
<b>2020-21</b>	13825 nos. (Karanj, imli, bamboo, banyan, chakunda, chaityan, bengium, siresh)	Internal Dump and In External OB Dump	Block	2.00m x 2.00m	1 mtr	5.53 Ha	93%
	1950 (Chatiyam, baul, bengium, siresh)	Embankment road	Avenue	2mtr	4 m	5.4Km	
	2215 nos. (Jamun, Mango, Papaya, Banana)	Agrofarmin g	Block	1m x 1m	1m	0.74 Ha	86%
	3000 nos. of distribution to nearby villages	Distributed to six peripheral villages					81%
<b>2021-22</b>	3833 nos. (Karanj, imli, bamboo, banyan, chakunda, chaityan, bengium, siresh)	Near Washery Site of Kulda OCP	Block	2.00 m x 2.00 m	1 mtr	1.53 Ha	82%




**Surface miner utilization for coal production**

- 100% of coal was produced by S/m in the period of 2021-22.
- Surface miners are being provided with water injection system to control dust during cutting of coal.
- OB production is done by Shovel-Dumper combination.
- No. of S/M Deployed: 05Nos.



**Coal production by S/M**



#### Coal Production under Kulda OCP

S.No.	Period	Total Coal Production (MT)	% production by Surface Miner Technology	%production by conventional technology
1	2019-20	13.62	96.13	3.87
2	2020-21	15.73	97.79	2.21
3	2021-22	18.49	100	0.00

## Forest Clearance of 227.89 Ha with respect to Kulda OCP

FOR: RD, CMPD

F. No. 5-176/1997-FC  
Government of India  
Ministry of Environment & Forests  
(FC Division)

Paryavaran Bhawan, CGO Complex,  
Lodhi Road, New Delhi - 110003

Dated: 08<sup>th</sup> August 2007

To: The Principal Secretary (Forests),  
Government of Orissa,  
Bhubaneswar.

Subj: Diversion of 227.89 ha of forest land (as against initially proposed 280.86 ha) for  
Kulda OCP of Mahanadi Coalfields Limited in Sundergarh district in Orissa.

Sr,

I am directed to refer to State Government's letter no. 10.F. (Cons) / 54 / 1997 / 8908 / F&E dated 09.05.1997 and no. 10.F. (Cons) / 54 / 1997 / 23070 / F&E dated 10.11.1998 on the subject cited above seeking prior approval of the Central Government under the Forest (Conservation) Act, 1980. After careful consideration of the proposal by the Forest Advisory Committee constituted under Section-3 of the said Act, in-principle approval for the said Mining Lease was granted vide this Ministry's letter of even number dated 25.07.2001 and 22.01.2002 subject to fulfillment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested the Central Government to grant final approval.

2. In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government vide letter no. 10.F. (Cons) / 59 / 2004 / 6910 / F&E dated 05.05.2007, approval of the Central Government is hereby granted under Section-2 of the Forest (Conservation) Act, 1980 for diversion 227.89 ha of forest land (as against initially proposed 280.86 ha) for Kulda OCP of Mahanadi Coalfields Limited in Sundergarh district in Orissa subject to fulfillment of the following conditions:

1. Legal status of the diverted forest land shall remain unchanged.
2. (i) Compensatory afforestation shall be raised and maintained by the State Forest Department at the project cost.
- (ii) Fencing, protection and regeneration of the safety zone area (7.5 metres strip all along the outer boundary of the mining lease area) shall be done at the project cost. Besides this, afforestation on degraded forest land, to be selected elsewhere, measuring one and a half times the area under safety zone, shall also be done at the project cost.
- (iii) Wherever possible and technically feasible, the User Agency shall undertake

CERTIFICATION OF NON-AVAILABILITY OF SCHEDULE-1 SPECIES



ବନଖଣ୍ଡ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ ସୁନ୍ଦରଗଡ଼ : ସୁନ୍ଦରଗଡ଼ ବନଖଣ୍ଡ

OFFICE OF THE DIVISIONAL FOREST OFFICER, SUNDARGARH FOREST DIVISION.

(Phone-06622-272243, FAX-06622-274987, email- dfosngdvn@yahoo.co.in )

No. 864 /4F (Misc)/2020 Dated: - 23 /02/2021.

To

The General Manager,  
Mahalaxmi Area, MCL

Sub:-

Clarification regarding no presence of schedule-I species in the project area and Buffer zone of Siarmal OCP and distance from Wildlife/National Sanctuary .

Ref:-

Letter No. 727 dt. 16.09.2020 of GM, Mahalaxmi Area ,MCL .

Sir

With reference to the letter cited above, as per copy of summary record of the Expert Appraisal Committee (EAC) for Environmental Appraisal of Coal Mining project constituted under the EIA notification, 2006, and issue raised in the meeting held on 17-18 August, 2020 vide (Agenda No. 1.2.4, item No. 8), this is to inform you that there is no presence of Schedule I species in the project area and buffer zone of Siarmal OCP, Mahalaxmi Area of M/s Mahanadi Coalfields Limited and the distance from nearest National Park is about 178 km from the project area.

Yours faithfully

Divisional Forest Officer,  
Sundargarh Forest Division.

20/2/2021

## Consent To Establish (19.6MTPA)



OFFICE OF THE  
STATE POLLUTION CONTROL BOARD, ODISHA

Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII,  
Bhubaneswar - 751 012

FAX : 2562822/2560955  
Tel : 2564033/2563924  
EPABX : 2561909/2562847  
E-mail: [paribesh1@ospboard.org](mailto:paribesh1@ospboard.org)  
Web site : [www.ospboard.org](http://www.ospboard.org)

BY SPEED POST  
THROUGH ONLINE

No. 3044 /

IND-II-CTE - 6652

Date 23.02.2022

**CONSENT TO ESTABLISH ORDER**

In consideration of the Online Application No. **3942384** for obtaining Consent to Establish for **Kulda OCP of M/s Mahanadi Coalfields Ltd.**, the State Pollution Control Board is pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for **enhancement of production of coal from 16.80 MTPA to 19.60 MTPA over mining lease area of 634.205 ha. At – Balinga, Tumulia, Siarmal, Kulda and Bankibahal, Himgir in the district of Sundargarh** with the following conditions.

**GENERAL CONDITIONS:**

1. This Consent to Establish is valid for the product, method of mining and capacity mentioned in the application form. This order is valid for five years. The proponent shall commence mining activities for the proposal within a period of five years from the date of issue of this Consent to Establish order. If the proponent fails to commence mining activities for the proposal within five years then a renewal of this consent to establish shall be sought by the proponent.
2. The mine shall apply for grant of Consent to Operate under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 & Air (Prevention & Control of Pollution) Act, 1981 at least 3 (three) months before the commencement of production and obtain Consent to Operate from this Board.
3. This Consent to Establish is subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.

**SPECIAL CONDITIONS:**

**A. GENERAL CONDITIONS:**

1. The proponent shall carryout mining activity as per Environmental Clearance issued vide letter No. J-11015/10/1995-IA,II(M), date 14.02.2022 by MoEF&CC, Govt. of India.
2. The proponent shall mix the fly ash generated by nearby thermal power plant with OB for back filling of the mine void as per fly ash notification of MoEF&CC, Govt. of India.
4. The mine should not store for more than seven days of coal production to avoid coal fire in stock yard as well as coal seam. The mine shall take adequate preventive measures for spontaneous fire in the coal seam as well as stock yard and an action plan regarding this shall be submitted at the time of consent to operate application.

## Consent To Operate (19.6MTPA)

Page 1 of 15

**CONSSENT ORDER**  
KULDA OCP OF M/S. MCL

**BY REGD. POST WITH AD**

**STATE POLLUTION CONTROL BOARD, ODISHA**  
[DEPARTMENT OF FOREST, ENVIRONMENT & CLIMATE CHANGE, GOVERNMENT OF ODISHA]  
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012  
Phone-2561909, Fax: 2562822, 2560955 E-mail: [paribesh1@ospboard.org](mailto:paribesh1@ospboard.org), Website: [www.ospboard.org](http://www.ospboard.org)

**CONSSENT ORDER**

No. 3139 / IND-I-CON- 5125 Dt. 25.02.2022

**CONSSENT ORDER NO. 2288**

**Sub:** Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.

**Ref:** Your online application No.3942666, Dated 18-01-2022 and Online reply dated 24-02-2022.

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: KULDA OCP OF M/S. MCL

Name of the Occupier & Designation: SRI RAJAT KUMAR JAIN, PROJECT OFFICER

Address: AT: BALINGA, PO: BASUNDHARA, DIST: SUNDERGARH.

This consent order is valid for the period up to 31.03.2023.

*This consent order supersedes the earlier consent order issued vide letter No. 5525 dated 31.03.2021.*

**Details of Products Manufactured**

Sl. No.	Product	Quantity
1.	Coal	(i) 18.5 MTPA (2021-22) (ii) 19.6 MTPA (2022-23)

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

## NoC from CGWA for Ground water abstraction



भारत सरकार  
जल शक्ति मंत्रालय  
जल संसाधन, नदी विकास  
और गंगा संरक्षण विभाग  
केन्द्रीय भूमि जल प्राधिकरण  
Government of India  
Ministry of Jal Shakti  
Department of Water Resources,  
River Development & Ganga Rejuvenation  
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

**NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION**

Project Name:	Kulda Opencast Project		
Project Address:	Office Of The Project Officer, Kulda Ocp, Basundhara Area, Mahanadi Coalfields Limited, District: Sundargarh, Odisha, Pin: 770076		
Village:	Bailanga	Block:	Hemgir
District:	Sundargarh	State:	Odisha
Pin Code:			
Communication Address:	Office Of The Project Officer, Kulda Ocp, Basundhara Area., Mahanadi Coalfields Limited, District: Sundargarh, Odisha, Pin:770076, Hemgir, Sundargarh, Odisha - 770076		
Address of CGWB Regional Office :	Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, Nh-5, Bhubaneshwar, Khordha, Odisha - 750001		

1. <b>NOC No.:</b>	CGWA/NOC/MIN/ORIG/2020/9245									
2. Application No.:	21-4/2112/OR/MIN/2018	3. Category: (GWRE 2017)	Safe							
4. Project Status:	Existing Project	5. NOC Type:	New							
6. <b>Valid from:</b>	09/12/2020	7. <b>Valid up to:</b>	08/12/2022							
8. Ground Water Abstraction Permitted:										
	Fresh Water		Saline Water							
	Dewatering		Total							
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day							
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day							
	47.00	17155.00	2449.00							
			893885.00							
9. Details of ground water abstraction /Dewatering structures										
	<b>Total Existing No.:9</b>					<b>Total Proposed No.:0</b>				
	DW	DCB	BW	TW	MP	DW	DCB	BW	TW	MP
Abstraction Structure*	0	0	7	0	0	0	0	0	0	0
Dewatering Structure*	0	0	0	0	2	0	0	0	0	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit										
10. Ground Water Abstraction/Restoration Charges paid (Rs.):	4555200.00									
11. Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers					Monitoring Mechanism				
						Manual	DWLR**	DWLR With Telemetry		
**DWLR - Digital Water Level Recorder	2					0	1	1		

(Compliance Conditions given overleaf)

This is an auto generated document &amp; need not to be signed.

18/11, जामनगर हाउस, मानसिंह रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Mansingh Road, New Delhi-110011  
Phone: (011) 23383561 Fax: 23382051, 23386743  
Website: cgwa-noc.gov.in

पानी बचाये - जीवन बचाये  
SAVE WATER - SAVE LIFE

## Hazardous Waste authorization of Kulda OCP



Tel : 2564033/2563924  
 EPABX : 2561909/2562847  
 E-mail:hwmd@ospboard.org /  
 paribesh1@ospboard.org  
 Website: www.ospboard.org

## STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]

Paribesh Bhawan, A/118, Nilakantha Nagar, Unit - VIII

Bhubaneswar - 751012, INDIA

**BY SPEED POST**

### FORM 2

[See rule 6(2)]

### RENEWAL OF AUTHORISATION BY STATE POLLUTION CONTROL BOARD, ODISHA TO THE OCCUPIER UNDER HAZARDOUS AND OTHER WASTES (MANAGEMENT AND TRANSBOUNDARY MOVEMENT) RULES, 2016

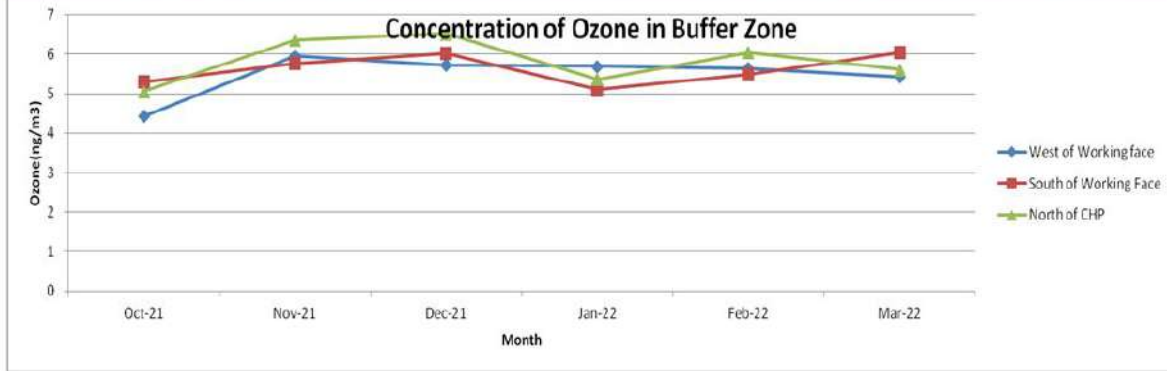
1. Number of authorization: IND-IV-HW-1038/ 3589 and date of issue: 14-03-2022
2. Reference of application (No. and date) : 3943101, dtd. 03-01-2022.
3. **Kulda OCP of M/s Mahanadi Coalfields Limited** is hereby granted an authorization based on the enclosed signed inspection report for generation, storage, transport, reuse, recycling, recovery, preprocessing, co-processing, utilization, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated At - **Balinga, P.O. - Basundhara, Dist - Sundargarh, Odisha.**

#### Details of Authorization

Sl. No.	Category of Hazardous Waste as per the Schedules I, II and III of these Rules	Waste Description	Quantity	Authorized Mode of Disposal or Recycling or utilization or Co-processing, etc.
1.	Schedules - I Stream -5.1	Used / Spent Oil	100 T/A	Storage in containers over impervious floor under well ventilated covered shed followed by disposal through Actual Users having valid authorization from SPCB, Odisha
2.	Schedules - I Stream -5.2	Waste / Residues Containing Oil	1.5 T/A	Storage in impervious pits / containers over impervious floor under well ventilated covered shed followed by disposal in the Authorized HW incinerator / Co-processing in authorized Cement Kiln/Common Hazardous Waste Treatment Storage Disposal Facility (CHWTSDF), Jajpur
3.	Schedules - I Stream -3.3	Sludge and Filters Contaminated with oil	20 T/A	Storage in impervious pits / containers over impervious floor under well ventilated covered shed followed by disposal in the Authorized HW incinerator / Co-processing in authorized Cement Kiln/ CHWTSDF, Jajpur



### Ozone concentration of Kulda OCP for the period of Oct'21-Mar'22



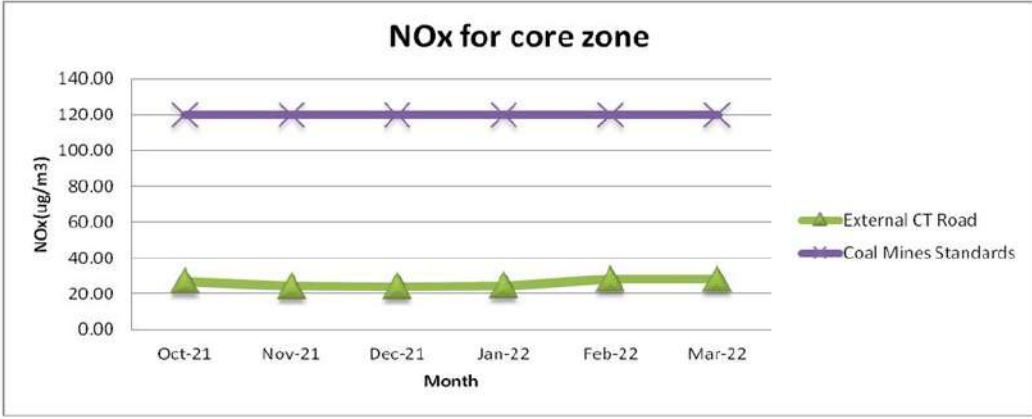
•All the other heavy metals like Lead, Arsenic, Nickel, Chromium, Cadmium are below detection limit and are well within standard.

Fugitive dust emission analysis report of Kulda OCP, Basundhara Area										
S.No.	Date	Operator Details	Working Hour (Hr)	Initial Weight (mg)w1	Final Weight (mg)w2	Difference in Weight (mg) (W=w2-w1)	Air Flow Rate (L/min)	Volume of Air (m <sup>3</sup> )	Concentration of Dust (mg/m <sup>3</sup> ) (C)	Standard (mg/m <sup>3</sup> ) (C)
1	01.10.2021	Drill	5	233.98	236.17	2.19	10	3.0	0.73	3
2	09.10.2021	Surface Miner	8	244.04	249.93	5.89	10	4.8	1.23	3
3	17.10.2021	Shovel (1.53 cum)	8	232.45	237.1	4.65	10	4.8	0.97	3
4	25.10.2021	Dumper	8	231.64	235.42	3.78	10	4.8	0.79	3
5	06.11.2021	Hydraulic Shovel (1.53 Cum)	4	237.16	239.44	2.28	10	2.4	0.95	3
6	15.11.2021	Pay Loader (6.5 Cum)	8	234.33	239.97	5.64	10	4.8	1.18	3
7	22.11.2021	Dozer	8	236.73	241.29	4.56	10	4.8	0.95	3
8	30.11.2021	Drill	3	235.55	237.19	1.64	10	1.8	0.91	3
9	05.12.2021	Surface Miner	8	239.11	244.91	5.80	10	4.8	1.21	3
10	09.12.2021	Pay Loader (6.5 Cum)	7	237.64	241.22	3.58	10	4.2	0.85	3
11	12.12.2021	Shovel (1.53 cum)	8	231.94	234.11	2.17	10	4.8	0.45	3
12	17.12.2021	Pay Loader (6.5 Cum)	8	233.90	238.61	4.71	10	4.8	0.98	3
13	23.12.2021	Dozer	8	236.88	242.34	5.46	10	4.8	1.14	3
14	31.12.2021	Dozer	8	231.84	236.35	4.51	10	4.8	0.94	3
15	09.01.2022	Surface Miner	8	238.08	239.21	1.13	10	4.8	0.24	3
16	13.01.2022	Surface Miner	8	231.32	236.12	4.80	10	4.8	1.00	3
17	27.01.2022	Surface Miner	8	236.45	240.63	4.17	10	4.8	0.87	3
18	30.01.2022	Dumper	6	233.98	236.17	2.19	10	3.6	0.61	3
19	10.02.2022	Pay Loader (6.5 Cum)	8	244.04	249.93	5.89	10	4.8	1.23	3
20	25.02.2022	Pay Loader (6.5 Cum)	8	232.45	237.1	4.65	10	4.8	0.97	3
21	02.03.2022	Pay Loader (6.5 Cum)	8	231.64	235.42	3.78	10	4.8	0.79	3
22	11.03.2022	Dumper	5	237.16	239.44	2.28	10	3.0	0.76	3
23	18.03.2022	Dumper	6	234.33	239.97	5.64	10	3.6	1.57	3
24	22.03.2022	Shovel (1.53 cum)	5	236.73	241.29	4.56	10	3.0	1.52	3
25	29.03.2022	Shovel (1.53 cum)	4	235.55	237.19	1.64	10	2.4	0.68	3

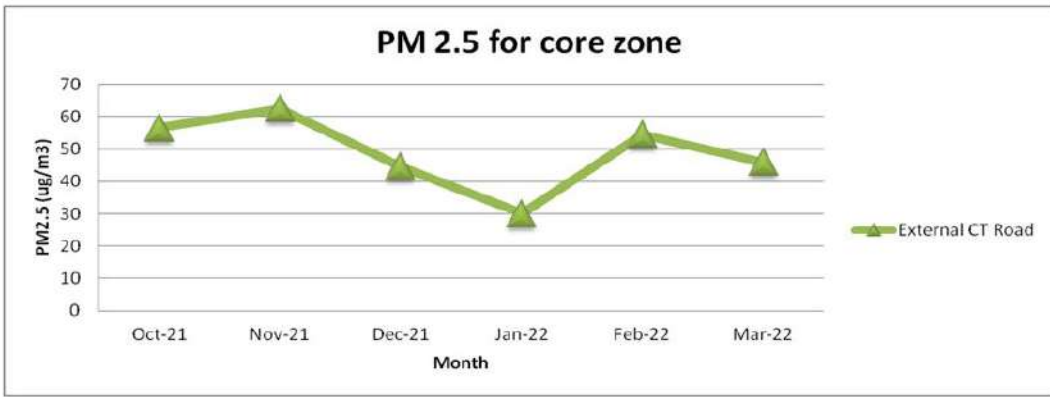
Air Quality Monitoring Reports of Kulda OCP



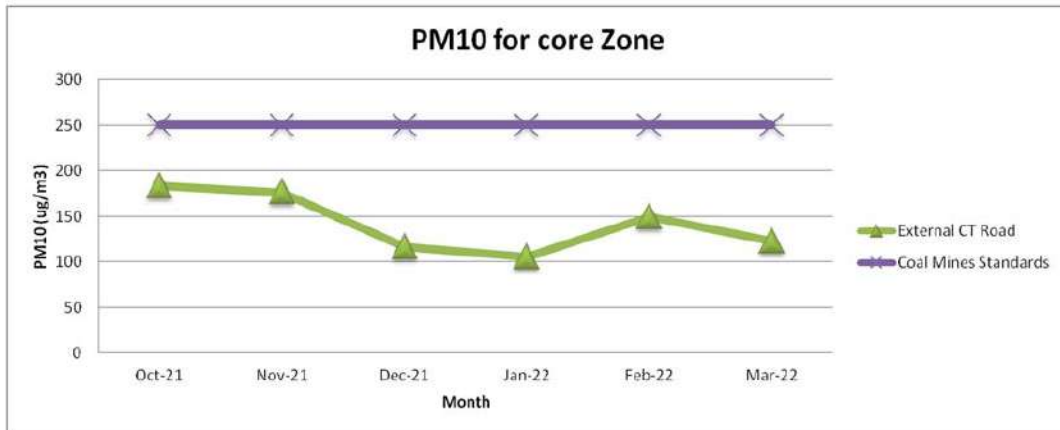
**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



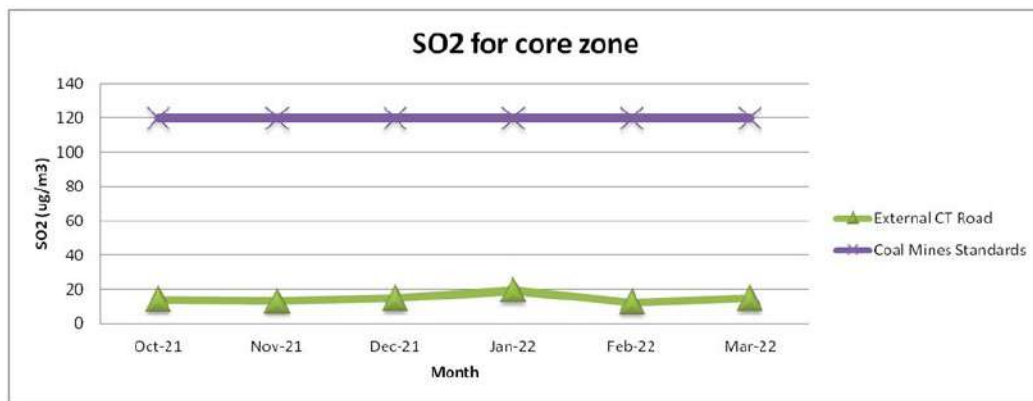
**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



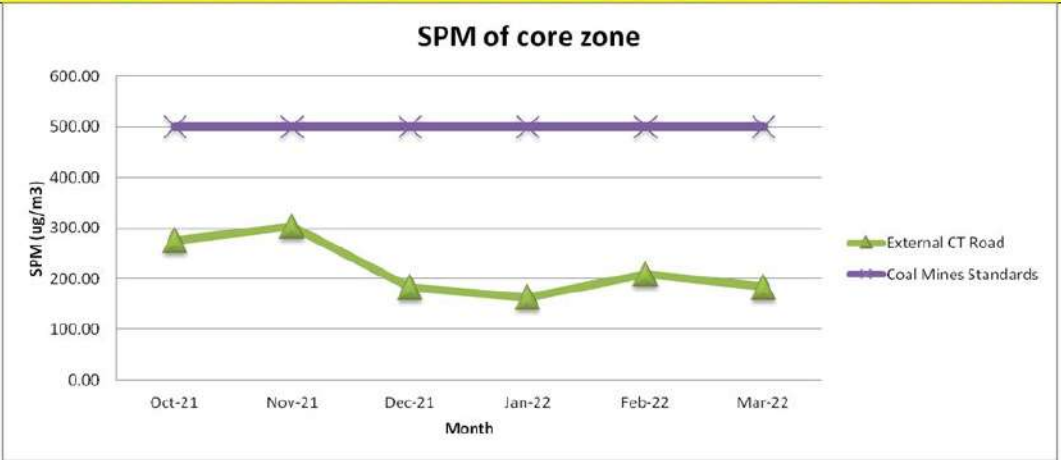
### AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22



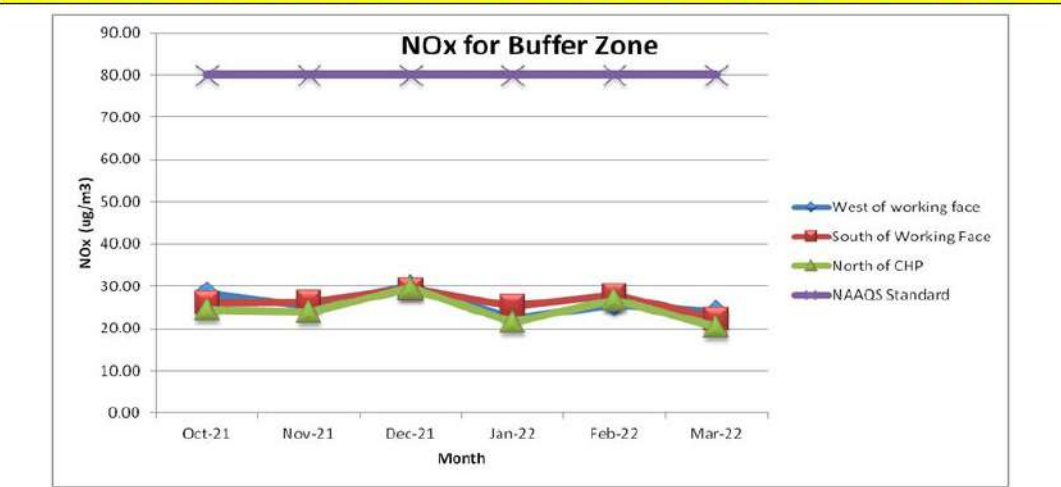
### AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22



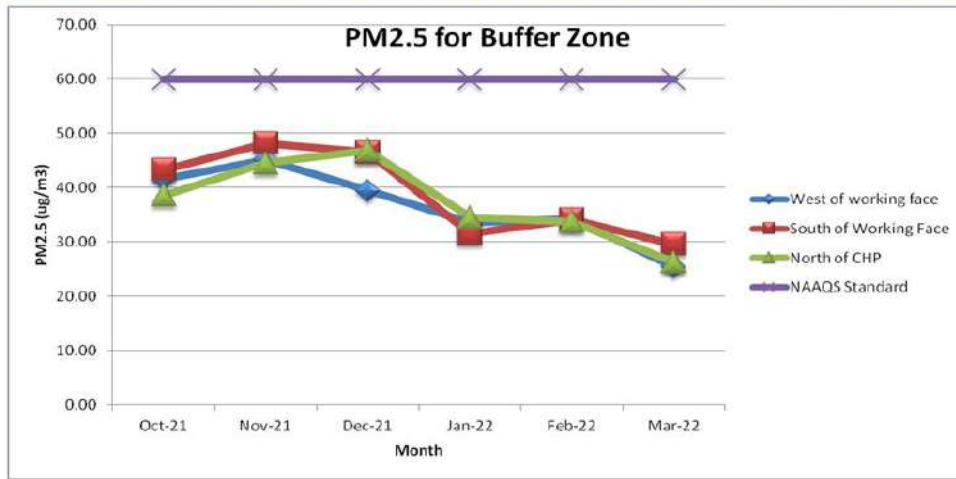
**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



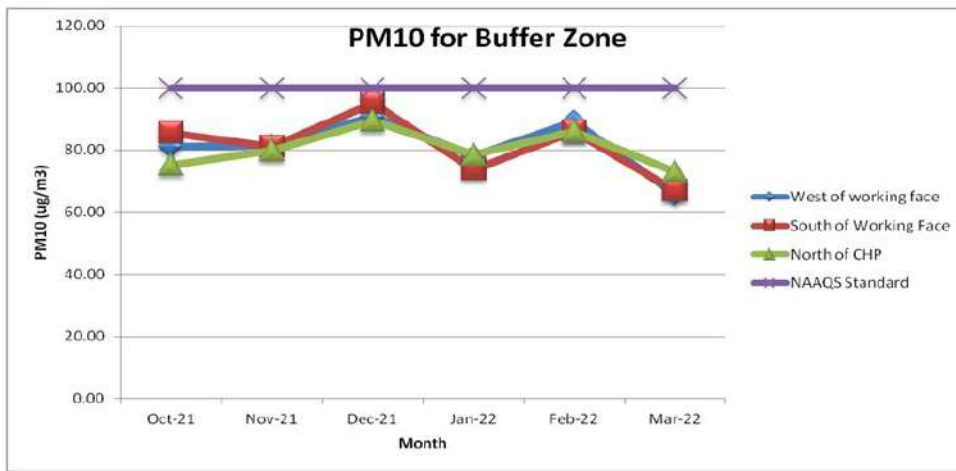
**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



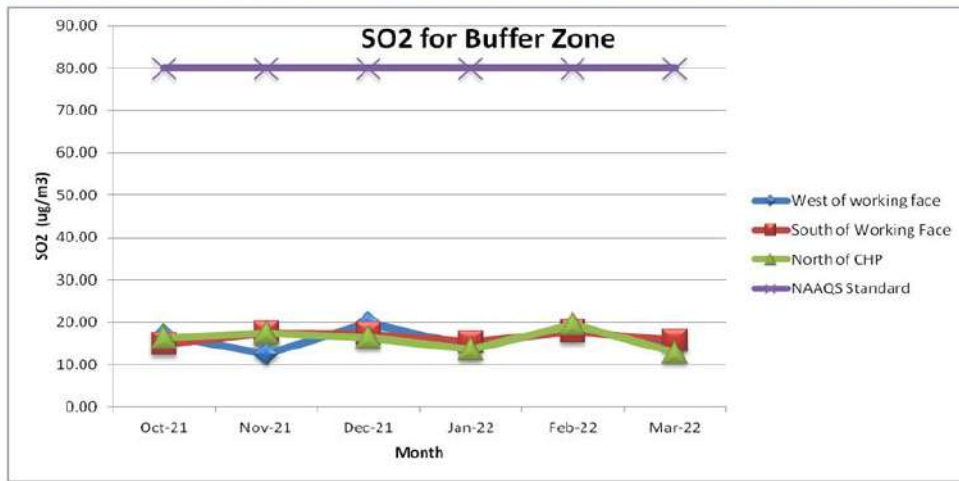
**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



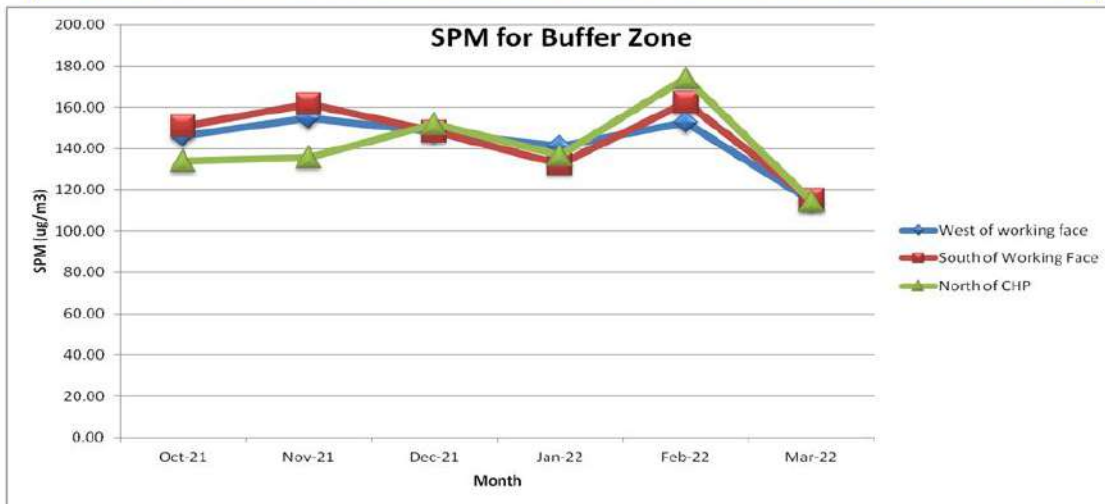
**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



**AIR QUALITY DATA FOR THE PERIOD OF OCT'21 TO MAR'22**



Air Quality Control Measures under Kulda OCP



**Wheel Washing System at Exit gates**



**Instant Shower system at Exit gates**



Air Quality Control Measures under Kulda OCP



**Fixed sprinklers at Coal Transportation Road**



**Mist Shower system at Coal Transportation Road**



Air Quality Control Measures under Kulda OCP



**Mobile fog canons at Coal Transportation Road**

- 5 nos. of Mobile Fog canon of 40m throwing capacity is being utilized at External Coal Transportation road




**Mobile fog canons at Sardega Siding**

- Mobile Fog canon of 40m throwing capacity is being utilized at Sardega Siding






Air Quality Control Measures under Kulda OCP



### Mobile tankers at Coal Transportation Road

- Contractual Mobile Water tankers have been deployed at every patch of external coal transportation roads near Kulda OCP.






### Mobile tankers at Coal Transportation Road


Departmental 28 KL Mobile Water tankers as well as 20 KL contractual water tankers have been deployed within the mines for control of dust emissions due to mining activities.

Kulda:


- 28 KL : 02 nos.
- 20 KL : 03 nos.
- 12 KL : 01 no.
- 10 KL : 01 no.


Air Quality Control Measures under Kulda OCP



**Vertical Greenery System at coal stock**




Raigarh - Sundargarh Rd, Bankibahal, Odisha 770076, India  
Latitude 22.034515° Longitude 83.752491°  
LOCAL 10:37:55 GMT 05:07:55 SATURDAY 09.04.2021 ALTITUDE 220 METER



**Coal Production by Eco-Friendly Surface Miners**

Coal Production under  
Kulda OCP using  
Surface Miner:


1. 2019-20: 96.13%
2. 2020-21: 97.79%
3. 2021-22: 100%



## Air Quality Control Measures under Kulda OCP



**Already Implemented Infrastructural Reforms**



Sl. No.	Name of Infrastructure	Capacity/ Quantity	Date of Commissioning	Investment	Remarks
<b>Rail &amp; Road Infrastructure</b>					
1	Jharsugda - Sardega Railway line	53.1 Km (Single line)	April 2018	1129 Cr.	Completed
2	Sardega Spur siding	20.0 Mty	April 2018	17.99 Cr	Completed
3	Concrete road to Sardega Spursiding.	6.0 Km	March 2019	19.50 Cr	Completed.
4	Transport Road form Siamal to Bankibahal	2.7 Km	January 2020	16.36 Cr	Completed
5	Strengthening & widening of Transport Road from Dudka to Kanika siding	25 Km	July 2020	209.40 Cr	Completed

## Air Quality Control Measures under Kulda OCP

Already implemented Air Pollution control measures				
SI. No.	Air Quality Control Measures	Date of Commissioning	Investment	Remarks
<b>Air Quality Control Measures</b>				
1.	Mist sprinklers along Concrete road to Sardega Spur siding.	Sept 2019	162 Lakhs	80 nos. Mist type Fixed sprinklers
2.	Transport Road from Barpalli to Bankibahal	January 2020	13.34 Lakhs	40 nos. Mist type Fixed sprinklers
3.	Sprinklers at Sardega Spur siding	March 2020	11.9 Lakhs	27 no. Fixed sprinklers have been provided – Rs.1.9 lakhs 03 nos. of 50 Mts throw trolley mounted fog cannon has been deployed- cost Rs. 10 Lakhs.
4.	Static Fog Canon	January' 2021	79.65 Lakhs	6 nos. & 3 nos. of fog canon of 100m throwing capacity has been installed at the coal stocks & siding respectively
5.	Hiring of 06 nos. of truck mounted fog canon of 40m throwing capacity	May' 2021	900.00 Lakhs	Deployed in the coal transportation road of Kulda OCP
6.	Mechanical Road Sweeper	March 2020	50.25 Lakhs	1 no.
7.	Plantation	2018-2022		1,05,230 nos.

Proposed Action Plan for Air Pollution Control measures					
Sl. No.	Name of Infrastructure	Quantity/ Nos.	Proposed date of Commissioning	Investment	Remarks/ Dust suppression arrangement
1	Jharsuguda - Sardega Railway line Ph-II i.e. Doubling of line, const. of loading bulb at Barpalli, const. of double line fly-over at Jharsuguda stn.		31-03-2025	2900 Cr (addl. approx.)	Inbuilt water sprinkling system will be provided along belt & Silo
2	Loading Bulb with 03 nos. silo & 04 nos. RLS on 07 nos. rail line at Barpalli yard	90 Mty. (3x10 = 30 & 4x15 = 60)	31-03-2026		
3	RLS with surge bin adjacent to Sardega siding	2 X 10 Mty.	31-03-2023	403.66 Cr.	Work awarded. Inbuilt water sprinkling system will be provided along belt & bin
4	Belt from Kulda-Garjanbahal OCP to silo at Barpalli loading Bulb	40 Mty.	31-03-2026	1000Cr. (Approx.)	Inbuilt water sprinkling system will be provided along belt & loading-unloading points.

### Proposed Action Plan for Air Pollution Control measures

Sl. No.	Name of Infrastructure	Quantity/ Nos.	Proposed date of Commissioning	Investment	Remarks/ Dust suppression arrangement
5	Trolley mounted Fog Cannons - 100 M Throw	02 nos.	Dec'2022	0.17 Cr	For Coal Stock of Kulda OCP
6	Mechanical Road sweeper on hiring basis for 3 years	03 nos.	Dec' 2022	Rs. 1.50 Cr	For External CT Road towards Sardega siding, Kanika siding, Sundargarh & Raigarh. Tender floated. Technical evaluation in process.

Annexure-XV

### Coal Transportation Road



### Coal Transportation Road



Coal Transportation road towards Kanika Railway Siding



Road towards Sardega Siding



Internal CT road - Kulda

Internal coal transportation roads has been concreted

Fog Canons installed at coal stocks of Kulda OCP

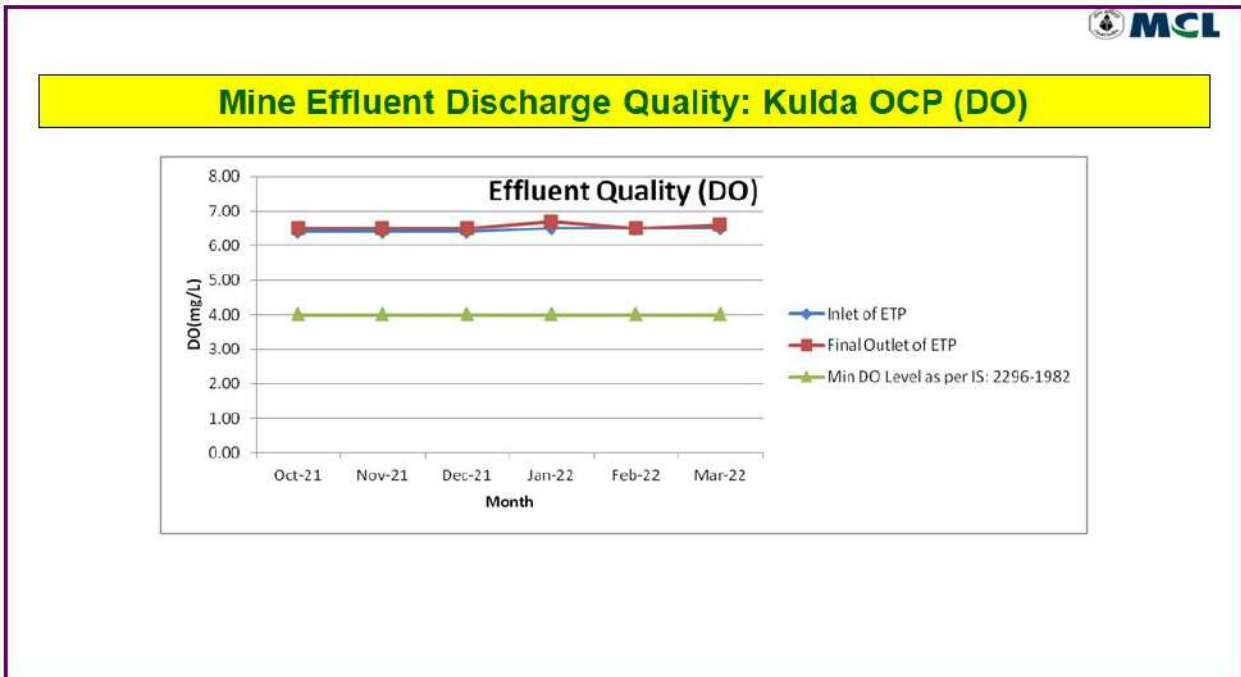
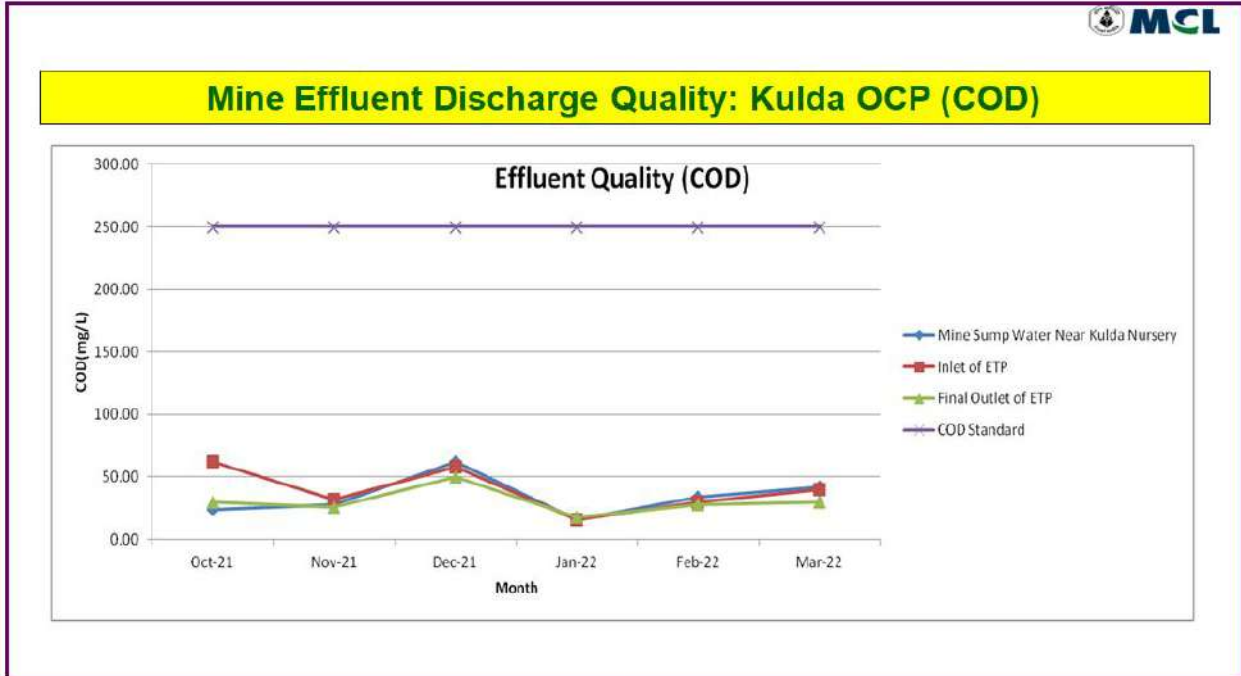


Annexure-XVII

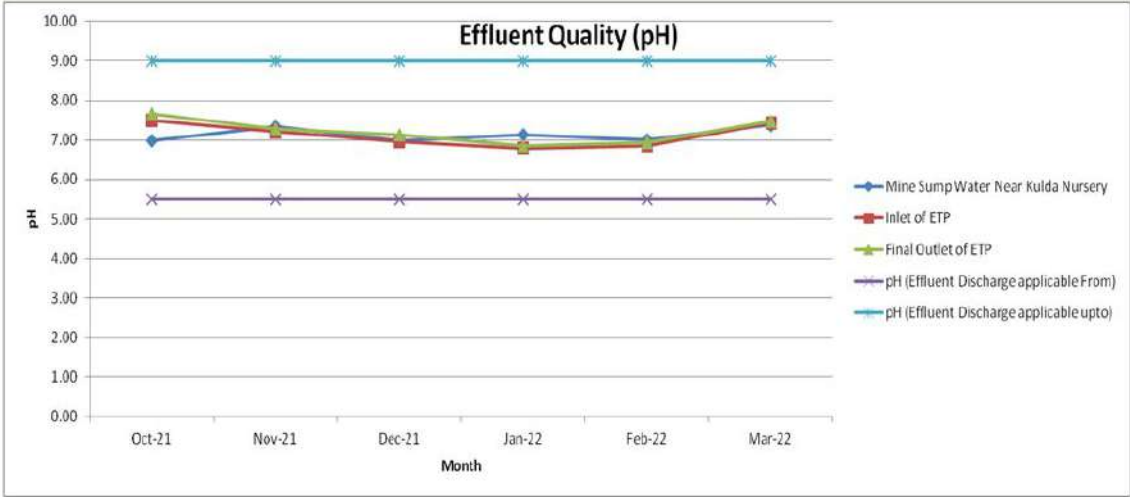
Effluent Quality of Mine water of Kulda OCP



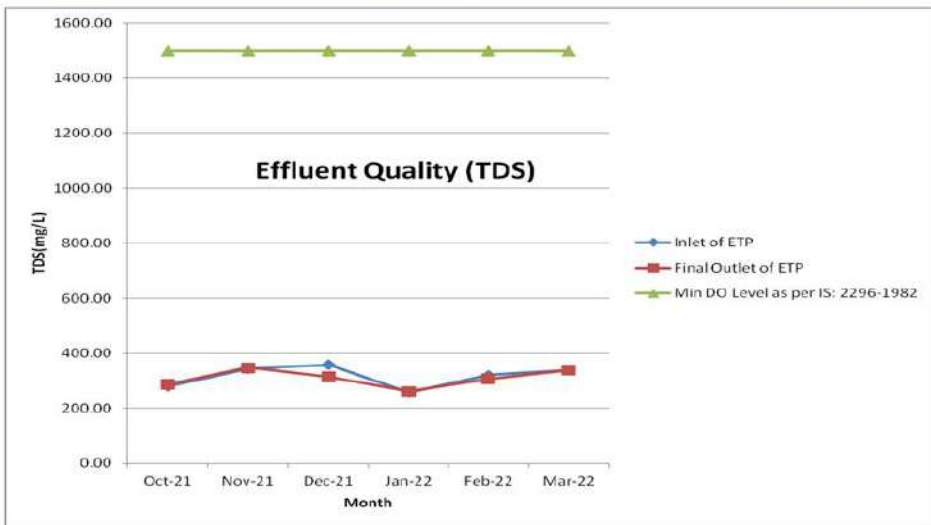
Effluent Quality of Mine water of Kulda OCP



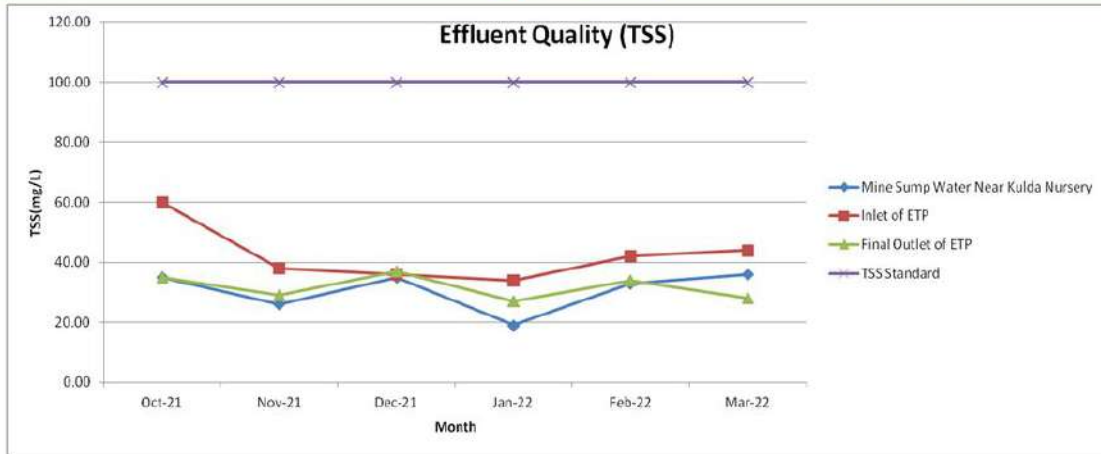
### Mine Effluent Discharge Quality: Kulda OCP (pH)



### Mine Effluent Discharge Quality: Kulda OCP (TDS)



### Mine Effluent Discharge Quality: Kulda OCP (TSS)



The oil and grease measured is below detection limit and is well within the standard.

Annexure-XVIII

LED Display board in front of Kulda Project displaying environmental monitoring data

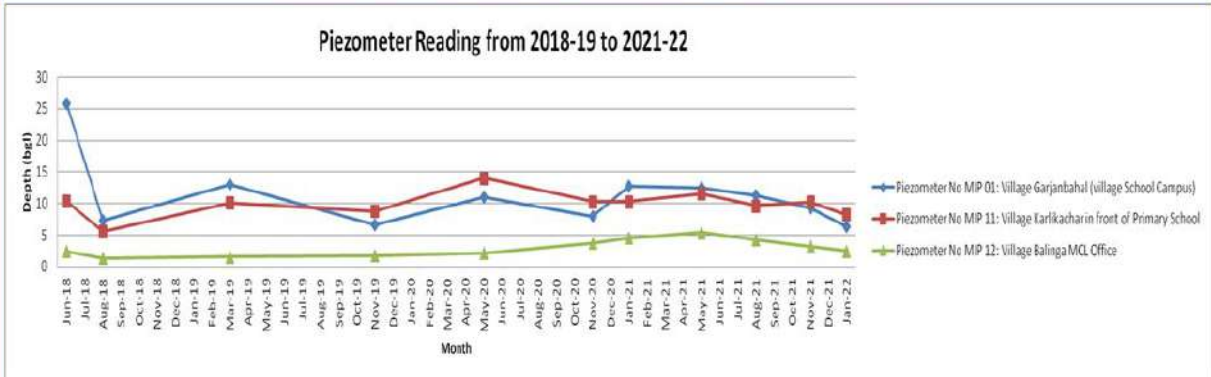
### LED Display Board at the Entry Gate of Kulda OCP



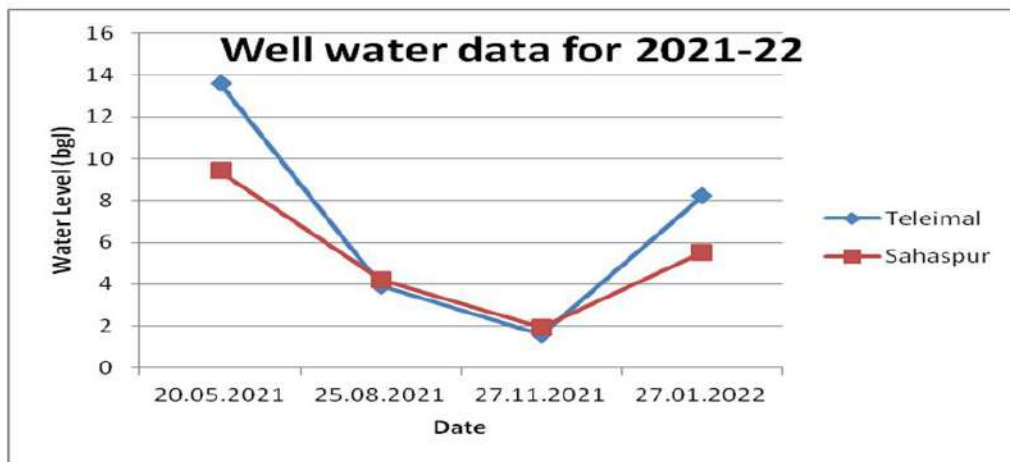
Ground water monitoring data



**Piezometer Reading: Kulda OCP (bgl)**



**Well Water Reading: Kulda OCP (bgl)**





## Surface Run-off Quality Monitoring Data

Surface water Quality Water Quality Data			
Project : Kulda OCP			
Data for the year period October 2021 to March 2022			
Project/OCP	Kulda		IS: 2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Basundhara River Near Bankibahal Bridge as u/s Water	Basundhara River Near Barpali Village d/s Water	
Date of sampling	26-Feb-2022	26-Feb-2022	
pH	6.37	6.35	6.5-8.5
Dissolved Oxygen(mg/L)	6.2	6.3	4
BOD (3 days 27oc)(mg/L)	2.10	2.30	3
Color (Hazen unit)	2	3	300
Total dissolved solids (mg/L)	122	120	1500
TSS(mg/L)	22	46	-
Total Hardness(mg/L)	40.0	44.0	-
Copper(mg/L)	<0.04	<0.04	1.5
Iron(mg/L)	<0.1	<0.1	50
Chlorides(mg/L)	12	16	600
Sulphate(mg/L)	10.86	11.29	400
Nitrate(mg/L)	1.32	1.34	50
Fluoride(mg/L)	<0.3	<0.3	1.5
Cadmium(mg/L)	<0.001	<0.001	0.01
Arsenic(mg/L)	<0.005	<0.005	0.2
Lead(mg/L)	<0.005	<0.005	0.1
Zinc(mg/L)	0.04	0.06	15
Chromium (as Cr6)(mg/L)	<0.05	<0.05	
Oil & Grease (mg/L)	<4.0	<4.0	0.1
MPN (Index/100ml)	9.2	6.8	
Selenium (mg/L)	<0.005	<0.005	



## Garland Drains and Check Dams around Mines



CHECK DAMS ALONG DRAINS

## MINE SUMP (CAPACITY 15.24 LAKH CUM) OF KULDA OCP



Kulda Mine Sump No.1



Kulda Mine Sump No.2

## Retaining wall around external OB Dump

The retaining wall at the toe of the external dump for a dimension of 500mx1.5mx0.5m





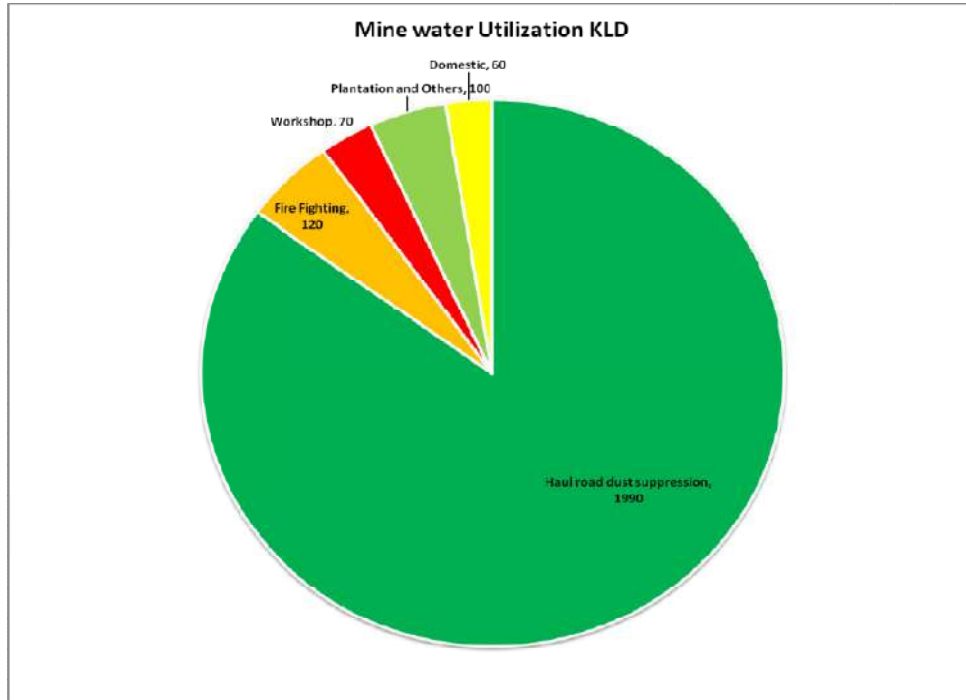
### Drinking Water supply to peripheral villages



#### SUMMER WATER SUPPLY DETAILS OF BASUNDHARA AREA - 2021-22

Sl No	Name of the vilage	No. of trips	Qty of water (in Ltr)	No. of days	Total qty of water (in Ltr)
1	Tikilipara	4	16000	90	1440000
	Sardega R&R	2	8000	90	720000
2	Khamarpara	4	16000	90	1440000
3	Gopalpur	4	16000	90	1440000
4	Kulda	2	8000	90	720000
	Chaitalgadi/ Bankibahal	3	12000	90	1080000
5	Siarmal	3	12000	90	1080000
6	Tumulua	6	24000	90	2160000
7	Garjanbahal	3	12000	90	1080000
8	Bangurkela	2	8000	90	720000
	Karikachar	1	4000	90	360000
9	Barpali vilage and R&R site	3	12000	90	1080000
10	Kuisira	3	12000	90	1080000
11	Balinga (Barpali road side)	3	12000	90	1080000
12	Duduka	3	12000	90	1080000
13	Kaletpani	3	12000	90	1080000
14	Sarangjhanra	3	12000	90	1080000
15	Sumra	3	12000	90	1080000
16	Ganjeibud	2	8000	90	720000
17	Tiuria	2	8000	90	720000

### Mine Water Utilization under Kulda OCP



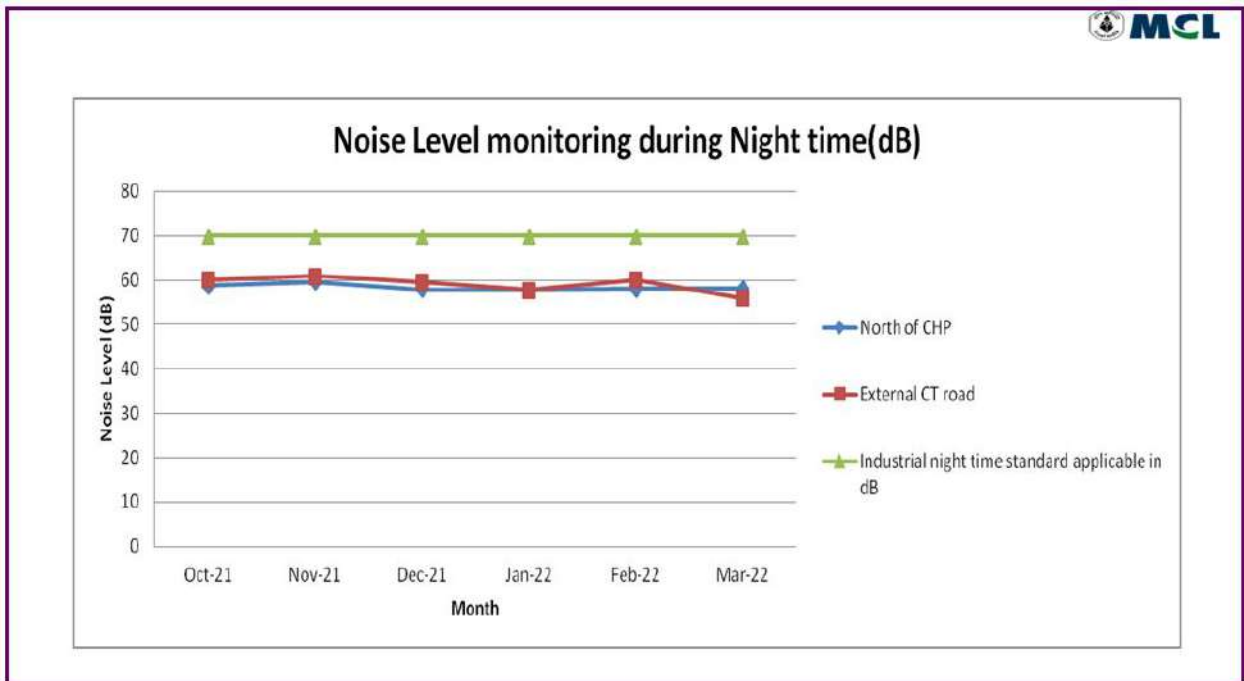
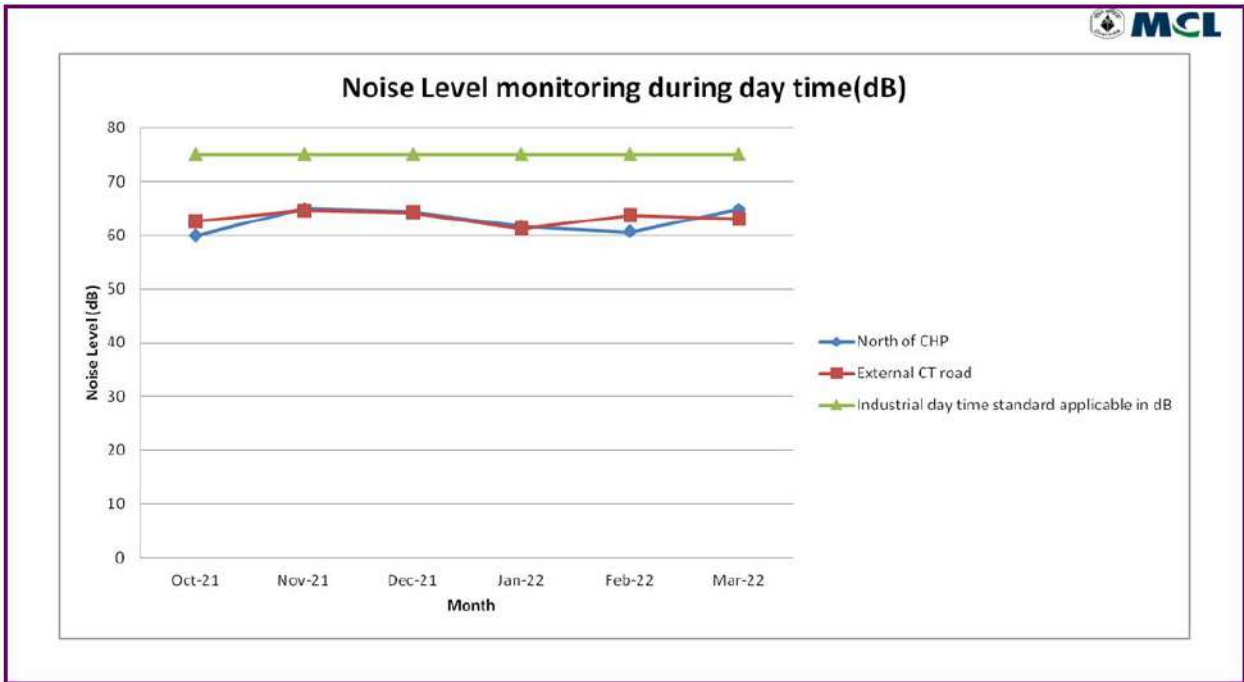
### Noise Quality Report of Kulda OCP

MCL

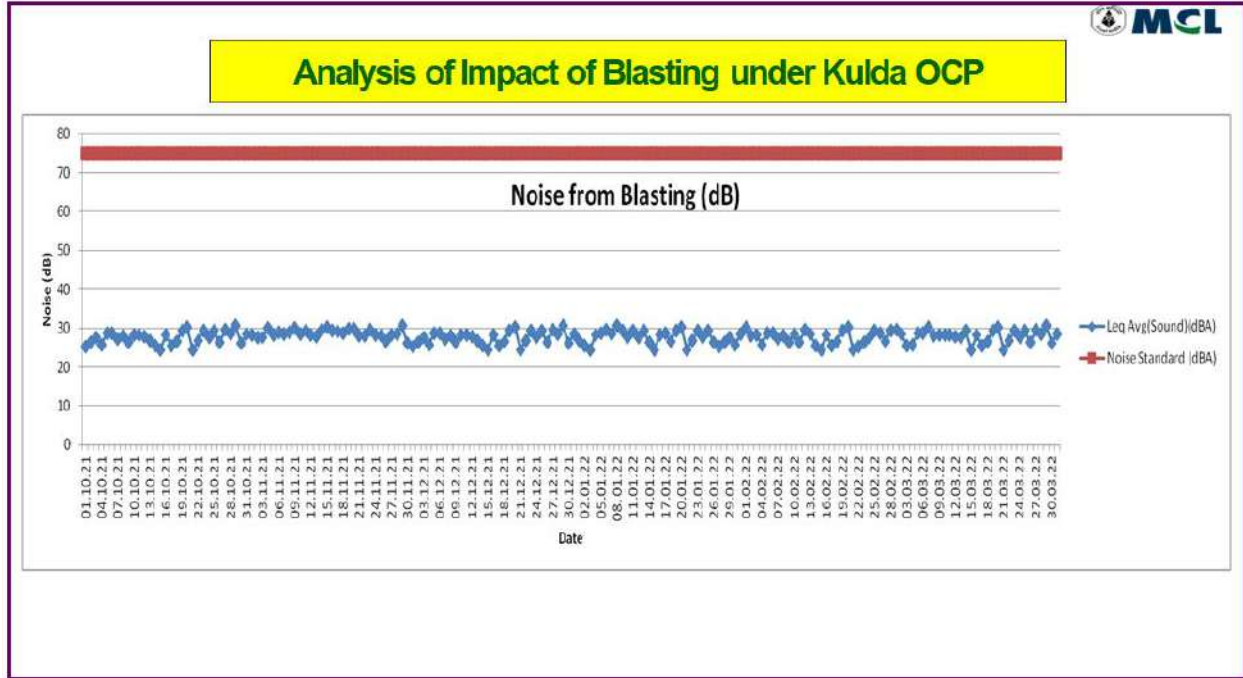
**Ear Muffs utilization under Kulda OCP**

The figure consists of two side-by-side photographs. The left photograph shows a white and grey piece of heavy machinery, a Wirtgen W 2200, with a worker in an orange safety vest and a white hard hat standing on the platform. The right photograph shows a similar worker in an orange safety vest and a white hard hat, wearing large, black, over-ear ear muffs, standing on the same platform of the machinery. The background in both photos is an outdoor mining or construction site.

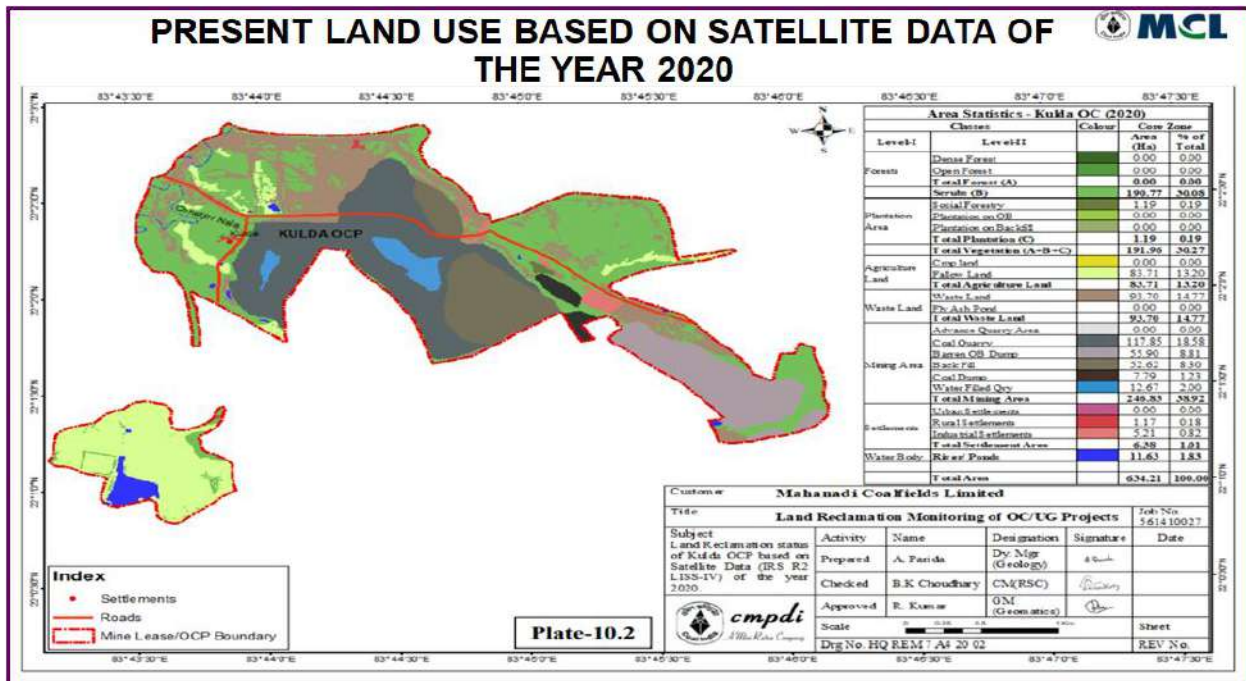
Noise Quality Report of Kulda OCP



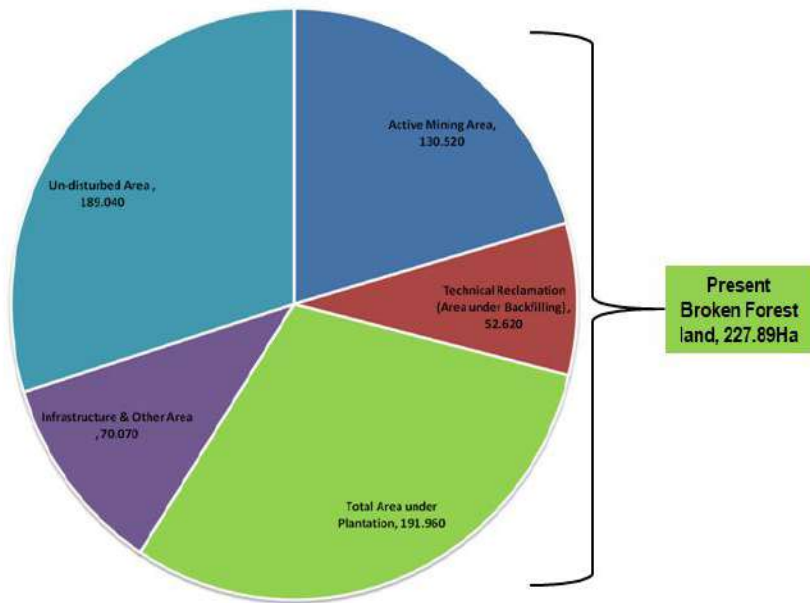
Noise Analysis report for the period of Oct'21 to Mar'22 under Kulda OCP



Satellite Based Land Use Map of Kulda OCP



Present Land Use based on satellite data of the year 2020 (Ha)



Annexure-XXVII

### Top Soil Management

Before



Grassing, Legumes and flowering plants has been planted in top soil to retain its fertility

After



### Plantation in internal and external OB Dumps of Kulda OCP



A total of 21,625 nos. of plants are planted in an area of 8.65Ha of internal as well as external OB Dump

### Safety Zone Plantation under Kulda OCP



A total of 25000 nos. of plants has been planted in the safety zone area.

## Plantation around MTK office of Kulda OCP

Plantation of 15,595 nos. of plants have been done in and around the infrastructure of Kulda OCP



Annexure-XXVIII

## Plantation around Mine



Kulda Mine is surrounded by dense vegetation, which acts as a natural wind barrier.





Plantation along coal transportation road towards Kanika Railway Siding



Urban Plantation in villages near coal transportation road towards Sundargarh



Baul plantation in the coal transportation towards Raigarh

## Annexure-XXVIII

### NEW INITIATIVES TAKEN

#### ❖ Departmental Nursery

- Seeds of various native species are collected by departmental members.
- Stored and used for germination before the onset of monsoon.
- The saplings are then planted at the vicinity of the mines.



#### ❖ Vertical Garden

An innovative approach to curb the air-borne dust, has been initiated at Basundhara Area.





**Vertical Greenery system of 100 m x 1.5m length has been installed in the Basundhara Area for the colony.**



Annexure-XXVIII

### DEPARTMENTAL NURSERY TO RAISE SAL



As per the advise of the EAC, Sal Plantation has been taken up in the Basundhara Coalfield. A **Sal Nursery** has been developed in **2019**. **8500 nos. of sapling** has been developed till date.

## Distribution of fruit bearing plants to nearby villagers and school



Distribution During the period of 2020-21:

3000nos. Of Fruit Bearing Plants has been distributed to the nearby villages and schools.



Annexure-XXIX

## Illumination at Kulda OCP



ମହାନଦୀ କୋଲ ଫିଲ୍ଡସ୍ ଲିମିଟେଡ୍  
 महानदी कोलफील्ड्स लिमिटेड  
 Mahanadi Coalfields Limited  
 (A subsidiary of Coal India Limited)

Office of the Project Officer  
 KULDA OCP  
 Basundhara Area  
 At/po- Basundhara- 770076  
 Dist - Sundargarh (Odisha)  
 Tel No. 06621-286133(O)  
 FAX:06621-286144



**MCL**

**ILLUMINATION SURVEY REPORT DATE :31.03.2022**  
**KULDA OCP, BASUNDHARA AREA**

Sl No.	Location	Place Details References	DGMS STANDARD		Observed Illumination		Action Taken/ Remarks
			Ver.	Hz.	Ver.	Hz.	
1	JRT Surface Miner Coal Face	Location -1	25.00	15.00	27	15	20 nos X 400W LED Light placed on pole
		Location -2	25.00	15.00	26	17	
		Location -3	25.00	15.00	28	16	
2	VFPL Surface Miner Coal Face - 1	Location -1	25.00	15.00	26	17	26 nos X 400W LED Light placed on pole
		Location -2	25.00	15.00	27	16	
		Location -3	25.00	15.00	26	16	
4	Coal Haul Road	Location -1	NA	10.00	NA	11	180Nos of 250W and 400W LED light fittings placed on pole and 2Nos X 16 Mtr Highmast tower added
		Location -2	NA	10.00	NA	13	
		Location -3	NA	10.00	NA	12	
		Location -4	NA	10.00	NA	11	
5	OB Face	Location -1	25.00	15.00	27	15	26 nos X 400W LED Light placed on pole
		Location -2	25.00	15.00	25	16	
		Location -3	25.00	15.00	26	17	
		Location -4	25.00	15.00	27	18	
6	OB Haul Road	Location -1	NA	10.00	NA	12	60Nos of 250W and 400W LED light fittings placed on pole
		Location -2	NA	10.00	NA	11	
		Location -3	NA	10.00	NA	13	
		Location -4	NA	10.00	NA	12	
7	Coal Stock Yard	Location -1	15.00	15.00	18	16	2Nos X 15 Mtr Highmast tower added in coal stock
		Location -2	15.00	15.00	19	16	
		Location -3	15.00	15.00	17	16	
		Location -4	15.00	15.00	18	15	
8	Dispatch Circuit Road	Location -1	NA	10.00	NA	11	40Nos of 250W and 400W LED light fittings placed on pole
		Location -2	NA	10.00	NA	13	
		Location -3	NA	10.00	NA	12	
		Location -4	NA	10.00	NA	11	
9	Mine Pump	Location -1	NA	40.00	NA	47	15 nos X 400W LED Light placed on pole
		Location -2	NA	40.00	NA	42	

Manager  
 Kulda OCP

Safety Officer  
 Kulda OCP

Elec. Safety Officer  
 Kulda OCP

31.03.2022  
 Kulda OCP

## Compliance status of Public Hearing



## COMPLIANCE OF PUBLIC HEARING ISSUES OF KULDA OCP

- **Public Hearing for Kulda OCP (Expansion from 10 Mty to 15 Mty) over an area of 634.205 Ha of Kulda OCP of M/s. Mahanadi Coalfields Limited**
- **Date -10.01.2018 at 11 AM**
- **Venue - Stadium field near Jagannath Mandir, Basundhara Area, Tikilipada of Hemgir Tahasil of Sundargarh District, Odisha**

COMPLIANCE TO THE ISSUES RAISED IN THE PUBLIC HEARING  
HELD ON 10.01.2018, FOR KULDA EXPANSION OCP (FROM 10 MTY TO 15.0 MTY)



S.No	Issues Raised by the public during PH	Compliance status as on 31.03.2022
1	<ul style="list-style-type: none"> <li>▪ Air Pollution</li> <li>▪ Pollution due to coal dust.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dust control Measures adopted after the public hearing are as follows:</li> </ul>

### Dust Suppression outside the mining area

S.No	Location	Distance covered/Trip	Control measures as on 10.01.2018	Control measures as on 31.03.2022	Expenditure incurred
1	Barpali to Duduka Chowk	2.0Km	Mobile tanker (4KI) – 4 Trip/day	Mobile tanker (4KI) – 7 Trip/day	13.04 lakh
2	Tumulia Chak to bankibahal	2.7Km	Mobile Tanker (8KI) – 4 Trip/day	Mobile Fog Canon (12KI)- 8 Trip/day	26.50 lakh
3	Bankibahal to Numbering point	1.1Km	Mobile Tanker (8KI) – 4 Trip/day	Mist Sprayer (8LPS) (40 nos.) – 8 Times/day	14.50 lakh
4	Numbering point to petrol pump	1.0Km	Not provided	Mobile Fog Canon (12KI)- 6 Trip/day	26.50 lakh
5	Gopalpur Diversion road	1.2Km	Mobile Tanker (8KI) – 4 Trip/day	Mobile Tanker (8KI) – 7 Trip/day	11.01 lakh
6	Sardega Siding	1.5Km	Not provided	Mobile Fog Canon (12KI)- 6 Trip/day Static Fog Canon (100m throw) (3nos.)- 8 Times/day	26.50 lakh
7.	In External CT Roads	28.0Km	Not provided	3 no. Mobile Fog Canon (12KI)-8 Trips/day	36.10 Lakh

### Dust Suppression inside the mining area

S.No	Detail of dust suppression units	Location	Quantity	Trips/Tanker/day as on 10.01.2018	Trips/Tanker/day as on 31.03.2022	Expenditure incurred
1	Mobile water tanker(28KI)	Haul roads	02	04	08	220.76 Lakhs
2	Mobile water tanker (20KI)	Coal and Ob face	02	04	08	12.21 Lakhs
3	Mobile water tanker (12KI)	Coal and Ob face	01	04	08	10.44 Lakhs
4	Mobile water tanker (10KI)	Coal and Ob face	01	04	08	9.36 Lakhs
5	Fog Canon (100m throwing capacity)	Coal stock	06	Not provided	08	53.10 lakhs
6	Fixed Sprinkler (20m throwing capacity)	Internal Coal transportation road	77	04	08	3.08 lakhs
7	Instant Shower	Exit Gates	5	Only 3 was provided	Installed in all the exits of Kulda OCP	7.49 Lakhs
8	Wheel washing system	Exit Gates	3	Not provided	Installed in all the exits of Kulda OCP	120 Lakhs

### Plantation under Kulda OCP

Last Four years Details of Green Belt Development under Kulda OCP, Basundhara Area			
Period	No. of plants	Species planted	Expenditure incurred
2018-19	25000	Simarua, Neem, Jamun, Tetuli, Karanj, Teak, Gambhar, Gulmohar, Mango, Amla, Guava, Bamboo, Bad Chakunda, Rain Tree, Mahul, Siris, Chatuan	83.48 lakh
2019-20	8,400		
2020-21	17,335		
2021-22	3833		

**ADDITIONAL AIR QUALITY CONTROL MEASURES IMPLEMENTED DURING APRIL 2018 TO MARCH 2022**

Sl. No.	Name of Infrastructure	Capacity/ Quantity	Date of Commissioning	Investment	Remarks
<b>Rail &amp; Road Infrastructure</b>					
1	Jharsuguda - Sardega Railway line	53.1 Km (Single line)	April 2018	1129 Cr.	Completed
2	Sardega Spur siding	20.0 Mty	April 2018	17.99 Cr	Completed There was an increase in rail despatch by 6% in 2019-20.
3	Concrete road to Sardega Spur siding.	6.0 Km	March 2019	19.50 Cr	Completed.
4	Transport Road from Siarmal to Bankibahal	2.7 Km	January 2020	16.36 Cr	Completed
5	Strengthening & widening of Transport Road from Dudka to Kanika siding	25 Km	July 2020	209.40 Cr	Completed

**ADDITIONAL AIR QUALITY CONTROL MEASURES IMPLEMENTED DURING APRIL 2018 TO MARCH 2022**

Sl. No.	Air Quality Control Measures	Date of Commissioning	Investment	Remarks
<b>Air Quality Control Measures</b>				
1.	Mist sprinklers along Concrete road to Sardega Spur siding.	Sept 2019	<b>162 Lakhs</b>	80 nos. Mist type Fixed sprinklers .
2.	Transport Road form Barpalli to Bankibahal	January 2020	<b>13.34 Lakhs</b>	40 nos. Mist type Fixed sprinklers
3.	Mechanical Road Sweeper	March 2020	<b>50.25 Lakhs</b>	1 no.
4.	Plantation	2018-2020	<b>83.48 Lakhs</b>	1,05,230 nos.

### ADDITIONAL AIR QUALITY CONTROL MEASURES IN PIPELINE

Sl. No.	Name of Infrastructure	Quantity/ Nos.	Proposed date of Commissioning	Investment	Remarks/Dust suppression arrangement
1	Jharsuguda - Sardega Railway line Ph-II i.e. Doubling of line, const. of loading bulb at Barpalli, const. of double line fly-over at Jharsuguda stn.		31-03-2025	2900 Cr (add. approx.)	Inbuilt water sprinkling system will be provided along belt & Silo
2	Loading Bulb with 03 nos.silo & 04 nos. RLS on 07 nos. rail line at Barpali yard	90 Mty (3x10 = 30 & 4x15 = 60)	31-03-2026		
3	RLS with surge bin adjacent to Sardega siding	2 X 10 Mty	March 2023	403.66 Cr.	Tender floated on 29-07-2020 Inbuilt water sprinkling system will be provided along belt & bin
4	Belt from Kulda-Garjanbahal OCP to silo at Barpalli loading Bulb	40 Mty	31-03-2026	1000Cr. (Approx.)	Inbuilt water sprinkling system will be provided along belt & loading-unloading points.

### ADDITIONAL AIR QUALITY CONTROL MEASURES IN PIPELINE

Sl. No.	Name of Infrastructure	Capacity	Proposed date of Commissioning	Investment	Remarks
8	Mechanical Road sweeper on hiring basis for 3 years	3 nos.	03 nos. – Dec' 2022	Rs. 6.4 Cr	For External CT Road to wards Sardega siding, Kanika siding, Sundargarh & Raigarh.

**With the commissioning of the above infrastructure in the area, there will be substantial improvement in the carrying capacity of the area in terms of air quality.**

**COMPLIANCE TO THE ISSUES RAISED IN THE PUBLIC HEARING  
HELD ON 10.01.2018, FOR KULDA EXPANSION OCP (FROM 10 MTY TO 15.0 MTY)**



Issues Raised by the Public during PH		Compliance Status as on 31.03.2022
2	Water Pollution Pollution due to Coal Dust	<ul style="list-style-type: none"> <li>▪ Garland drains (7632m x 1.5m x 1.5m) and Berm (4809m x 1.5m x 1.5m) has been provided all around the mine boundary and External dump.</li> <li>▪ Catch drains (3349m x 1m x 1m) has been provided at coal stocks and internal dump</li> <li>▪ The water so collected in the catch drains is channelized into the mine sump (capacity -15.24 lakh cum) of Kulda OCP, which is further utilized for industrial purposes like dust suppression and fire-fighting, green belt development etc.</li> <li>▪ The drains are cleaned and de-silted pre-monsoon and post-monsoon, annually twice.</li> <li>▪ ETP of capacity 450KLD has been provided for workshop and the treated water is directed into the mine sump ensuring zero discharge. The oil and grease traps are also in operation and are working efficiently. The monitoring report of effluent of ETP is being submitted to the MoEF&amp;CC regularly.</li> </ul>

9



**ADDITIONAL WATER QUALITY CONTROL MEASURES**

Sl. No.	Name of Infrastructure	Capacity	Proposed date of Commissioning	Investment	Remarks
1.	Retaining wall along external OB dump	(500m x 0.40m x 2m)	30.06.2021	71 Lakhs	Completed
2.	Modification of ETP with State-of-Art Technology, as per the recommendation of ERO, MoEF&CC, BBSR	450 KLD	31.12.2021	59 Lakhs	Completed

**COMPLIANCE TO THE ISSUES RAISED IN THE PUBLIC HEARING  
HELD ON 10.01.2018, FORKULDA EXPANSION OCP (FROM 10 MTY TO 15.0 MTY)**

Issues Raised by the Public during PH		Compliance Status as on 31.03.2021
3	Drinking water supply	<ul style="list-style-type: none"> <li>▪ Drinking water supply is being done for peripheral villages during the summer (90 days).</li> <li>▪ Apart from that work of drinking water supply to Barpali, Kushara etc is being taken up with district administration on deposit basis under CSR.</li> <li>▪ As per requirement MCL is supplying drinking water to all the nearby villages in consultation with district administration. Details of drinking water supply is in the subsequent slide.</li> </ul>

Drinking water supply details to the nearby villages of Basundhara Area			
S.No.	Name of the village	Total qty of water (in Ltr)	Expenditure incurred
1	Tikilipara	1440000	51 Lakhs
	Sardega R&R	720000	
2	Khamarpara	1440000	
3	Gopalpur	1440000	
4	Kulda	720000	
	Chaitalgadi/ Bankibahal	1080000	
5	Siarmal	1080000	
6	Tumulia	2160000	
7	Garjanbahal	1080000	
8	Bangurkela	720000	
	Karikachar	360000	
9	Barpali village and R&R site	1080000	
10	Kuisira	1080000	
11	Balinga (Barpali road side)	1080000	
12	Duduka	1080000	
13	Kaletpani	1080000	
14	Sarangjharua	1080000	
15	Sumra	1080000	
16	Ganjeibud	720000	
17	Tiuria	720000	

**COMPLIANCE TO THE ISSUES RAISED IN THE PUBLIC HEARING  
HELD ON 10.01.2018, FOR KULDA EXPANSION OCP (FROM 10 MTY TO 15.0 MTY)**



	Issues Raised by the Public during PH	Compliance Status as on 31.03.2022																								
4	<ul style="list-style-type: none"> <li>• Employment for unemployed youth</li> </ul>	<ul style="list-style-type: none"> <li>• MCL is providing employment to all the land looser as per recommendations of the Honorable Claim Commission setup by the Supreme Court of India. So far MCL Basundhara has already provided employment to 344 nos. of persons against Kulda OCP, 08 nos. are not eligible and will be providing the balance employment to 41 nos. as per recommendations of the Claim Commission.</li> <li>• The R&amp;R policy of MCL is in accordance with the R&amp;R policy of Govt of Odisha 2006, which is one of the best R&amp;R policy of India.</li> <li>• Besides this there are scopes of indirect employment in the mines. The villagers are being employed in various department of Kulda OCP for looking after day to day work on contract basis. The details has been provided below:</li> </ul> <table border="1" data-bbox="813 604 1416 814"> <thead> <tr> <th>S.No.</th> <th>Department</th> <th>Manpower employed (nos.)</th> <th>Expenditure incurred in 2020-21</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Environment Dept.</td> <td>4</td> <td>6.00 Lakhs</td> </tr> <tr> <td>2</td> <td>Mining and Safety Dept.</td> <td>328</td> <td>492.00 Lakhs</td> </tr> <tr> <td>3</td> <td>E&amp;M Dept.</td> <td>2</td> <td>3.00 Lakhs</td> </tr> <tr> <td>4</td> <td>Civil Dept.</td> <td>18</td> <td>27.0 Lakhs</td> </tr> <tr> <td>5</td> <td>Security Dept.</td> <td>153</td> <td>304.66 Lakhs</td> </tr> </tbody> </table>	S.No.	Department	Manpower employed (nos.)	Expenditure incurred in 2020-21	1	Environment Dept.	4	6.00 Lakhs	2	Mining and Safety Dept.	328	492.00 Lakhs	3	E&M Dept.	2	3.00 Lakhs	4	Civil Dept.	18	27.0 Lakhs	5	Security Dept.	153	304.66 Lakhs
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## Compliance status of OM No.-Z-11013/5712014-IA.II(M)



**Compliance of OM no. Z-11013/57/2014-IA.II(M) dated:29<sup>th</sup> Oct 2014**

**Environment Clearance of Kulda OCP (19.6 MTPA)**

**J-11015/10/1995-IA-II(M), dt.-14.02.2022**

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**



S.No.	Conditions	Current Status of Compliance
i.	The Project Authority shall adopt Best mining Practice for the given mining conditions. In the mining area, adequate number of check dams, retaining walls/structures, garland drains and settling ponds should be provided to arrest the wash – off with rain water in catchment area.	<p><b>Status: Complied</b></p> <p>Following best practices are being adopted by Kulda OCP:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Surface Miner technology is an eco-friendly technology as it eliminates three dust generating activity viz drilling, blasting &amp; crushing. The total production is carried out through 05 nos. of surface miners. Control Blasting using Electronic detonator as per DGMS guidelines is being done at Kulda OCP to mitigate ground vibrations and fly rocks.</li> <li><input type="checkbox"/> Dust Suppression using mobile tankers and newly introduced fog canon system is being done in all the major dust generating source of the mines. Fog cannon generate fine mist of water which is effective in controlling PM10 &amp; PM2.5 in mine environment.</li> </ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
i.	Contd...	<ul style="list-style-type: none"><li><input type="checkbox"/> Effluent is being treated in ETP and reused for industrial purpose, ensuring zero discharge.</li><li><input type="checkbox"/> Garland drains (7632mx1.5mx1.5m) and Berm (4809mx1.5mx1.5m) has been provided all around the mine boundary and External dump. Catch drains (3349mx1mx1m) has been provided at coal stocks and internal dump. The water so collected in the catch drains is channelized into the mine sump (capacity -15.24 lakh cum) of Kulda OCP, which is further utilized for industrial purposes like dust suppression and fire-fighting, green belt development etc. The drains are cleaned and de-silted pre-monsoon and post-monsoon, annually twice.</li><li><input type="checkbox"/> Retaining wall (500mx0.40mx2m) along external OB dump- has been provided.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
ii.	The natural water bodies and or streams which are flowing in and around the village should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Authorities have to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table.	<ul style="list-style-type: none"><li><input type="checkbox"/> The natural water bodies and/or stream flowing in and around the villages are not disturbed. Basundhara (E) worked out quarry has been developed as a water reservoir from which potable water after treatment is supplied to colony &amp; villages. In view of the ground water monitoring data, It can be seen that there is no reduction in water table, rather there is an improvement in water table.</li><li><input type="checkbox"/> Kulda mine is a zero discharge mine. Water required for all the industrial use of the mine are met from the mine water. The following control measures have been taken by the project to prevent any disturbance to the ground water: Garland drains (7632mx1.5mx1.5m) and Berm (4809mx1.5mx1.5m) has been provided all around the mine boundary and External dump.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
ii.	Contd...	<ul style="list-style-type: none"><li><input type="checkbox"/> Catch drains (3349mx1mx1m) has been provided at coal stocks and internal dump The water so collected in the catch drains is channelized into the mine sump (capacity -15.24 lakh cum) of Kulda OCP, which is further utilized for industrial purposes like dust suppression and fire-fighting, green belt development etc.</li><li><input type="checkbox"/> The drains are cleaned and de-silted pre-monsoon and post-monsoon, annually twice.</li><li><input type="checkbox"/> Drinking water is supplied to nearby villages.</li><li><input type="checkbox"/> The ground water monitoring reports are being submitted six monthly to MoEF&amp;CC.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
iii.	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations.	<ul style="list-style-type: none"><li><input type="checkbox"/> Villages in the ML area have been shifted after providing all the R&amp;R benefits as per the Odisha R&amp;R Policy.</li><li><input type="checkbox"/> Well planned R&amp;R site has been prepared in Barpali, Chattenpali &amp; Diamunda</li><li><input type="checkbox"/> Adequate care is taken to ensure that the illumination &amp; sound at the project site does not disturb the human &amp; animal population in the villages.</li><li><input type="checkbox"/> Green belt development in and around Kulda OCP helps reducing the impact of mines.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
iii.	Contd..  Habitations have a right to darkness and minimal noise levels at night. The Project Proponents (PPs) must ensure that the biological clock of the villagers is not disturbed by orienting the floodlights/ masks away from the noise levels well within the prescribed limits for day/night hours.	<ul style="list-style-type: none"><li><input type="checkbox"/> Vertical greenery system has been provided in the downwind direction of coal stocks under Kulda OCP for a length of 600m and wind barrier of height 10m and length 1000m has been proposed in the upwind direction of coal stocks.</li><li><input type="checkbox"/> Controlled blasting is carried in day time using Electronic detonator as per DGMS guidelines to mitigate ground vibrations and fly rocks. The vibration and noise report is being sent to MoEF&amp;CC six monthly.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
iv.	The Project Authority shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing. In this context, Project Authority should implement the directions of the Hon'ble Supreme Court with regard to acquiring grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun should be scrupulously guarded against felling lest the cattle abandon the grazing ground or return home by noon.	<ul style="list-style-type: none"><li><input type="checkbox"/> Grazing land has been provided at Chattenpali R&amp;R site of size 4812.738 Sq mt. with consultation of State Government.</li><li><input type="checkbox"/> Provision of Drinking water for cattle have been provided in an area of 1831.415 Sq. mt.</li><li><input type="checkbox"/> Plantation has been done in the R&amp;R site which shall provide shade from scorching sun light.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**



S.No.	Conditions	Current Status of Compliance
v.	Where ever blasting is undertaken as part of mining activity, the Project Authority shall carry out vibration studies well before approaching any such habitats or other buildings to evaluate the Zone of influence and impact of blasting on the neighborhood. Within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction, such as ripper/dozer combination/rock breakers/surface miners etc. should be seriously considered and practiced wherever practicable.	<ul style="list-style-type: none"> <li><input type="checkbox"/> As per the lease deed under rule 31 of MCR 1960, no blasting is being done within 50m of public works as mentioned in the condition.</li> <li><input type="checkbox"/> Blasting has been eliminated in coal by introduction of Surface Miner Technology. 05 nos. of surface miners has been provided in the mines.</li> <li><input type="checkbox"/> The total production is carried out through wet operated surface miners. Blasting is only done in the OB benches.</li> <li><input type="checkbox"/> Blasting is done as per the permission granted by DGMS &amp; Chief Controller of Explosives.</li> <li><input type="checkbox"/> Ground vibration study is regularly conducted in the mine to know the intensity of the blast induced vibration at different distances from the blasting site.</li> </ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**



S.No.	Conditions	Current Status of Compliance
v.	Contd...  A provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units could be ascertained, The covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carried out within 50 meters of public works such as public roads and buildings of inhabited sites except with in prior permission from the Competent Authority.	<ul style="list-style-type: none"> <li><input type="checkbox"/> With adoption of controlled blasting technique the vibrations are kept under control.</li> <li><input type="checkbox"/> Control Blasting using Electronic detonator as per DGMS guidelines is being done in day time at Kulda OCP to mitigate ground vibrations and fly rocks and any disturbance to the biological clock of nearby villages.</li> <li><input type="checkbox"/> The vibration and noise report is being sent to MoEF&amp;CC six monthly.</li> </ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**



S.No.	Conditions	Current Status of Compliance
vi.	Main haulage road in the mine should be provided with permanent water sprinklers and other roads should be regularly wetted with water tankers fitted with sprinklers. Crusher and material transfer points should invariably be provided with Bag filters and or dry logging system. Belt- conveyors should be fully covered to avoid air borne dust.	<p><input type="checkbox"/> Water sprinkling arrangement through fixed &amp; mobile water sprinklers has been provided on the Main haulage road in the mine and other transport roads.</p> <p><input type="checkbox"/> Details are given below :</p> <p>1. Haul Roads &amp; Transport Roads: the following measures are existing for dust suppression at road.</p> <p>i. Fixed Sprinklers – 92 Nos.</p> <p>ii. Mist Sprayer sprinkler– 25 Nos.</p> <p>iii. Water tankers – 2x28kl, 2x20kl, 1x12kl, 1x10kl, 1x4kl.</p> <p>iv. Mobile Fog Canon, 40 m throw (12Kl) – 6 Nos.</p> <p>Instant showers and wheel washing system installed at all the exit gates</p>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**



S.No.	Conditions	Current Status of Compliance
vi.	Contd....	<p>2. Dust Suppression Measures of in pipeline:</p> <p>a) Deployment of 01 number of Mechanical road sweeper on hiring for 3 years- 31.12.2022. Total estimated cost is Rs. 50 Lakh.</p> <p>b) 20 MT capacity Rapid Loading System with belt &amp; serge bin is likely to be commissioned by Mar'2023.</p> <p>d) Belt from the mine to silo at Barpalli loading Bulb Loading Bulb with 03 nos. silo &amp; 04 nos. RLS on 07 nos. rail line at Barpali yard is proposed to be commissioned by Mar'2026.</p>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
vii.	The Project Authority shall ensure that the productivity of agricultural crops is not affected due to mining operations. Crop Liability Insurance Policy has to be taken by the PP as a precaution to compensate for any crop loss. The impact zone shall be 5km from the boundary of mine lease-area for such insurance policy. In case, several mines are located in a cluster, the Associations of owners of the cluster mines, formed inter-alia, to sub-serve such an objective, shall take responsibility for securing such Crop Liability Policy.	<ul style="list-style-type: none"><li><input type="checkbox"/> The project proponent always ensures that there is no effect of mining operation to the nearby villages.</li><li><input type="checkbox"/> The total water demand of mines including industrial as well as domestic water demand is met from the water abstracted from the mine sump.</li><li><input type="checkbox"/> The project is ensuring zero discharge by reutilizing the waste water generated from the mines after treatment.</li><li><input type="checkbox"/> Also, the project proponent has taken initiatives for meeting the water requirement of nearby villagers by creating artificial ponds.</li><li><input type="checkbox"/> Further, it is to state that company has not obtained any crop liability insurance policy but crop compensation is being provided in consultation with the State Government of Odisha.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
viii.	In case any village is located within the mining leasehold which is not likely to be affected due to mining activities during the life of mine, the Expert. Appraisal Committee (EAC) should consider the proposal of Environmental Clearance (EC) for reduced mining area. The Mining lease may be executed for the area for which EC is accorded. The mining plan may also be accordingly revised and required stipulations under the MMDR Act, 1957 and MCR, 1960 met.	<p>Not Applicable</p> <ul style="list-style-type: none"><li><input type="checkbox"/> The total lease area of 634.205 Ha has been engaged in mining activities.</li><li><input type="checkbox"/> Villages in the ML area have been shifted after providing all the R&amp;R benefits as per the Odisha R&amp;R Policy.</li><li><input type="checkbox"/> Well planned R&amp;R site has been prepared in Barpali, Chattenpali &amp; Diamunda</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
ix.	Transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sound, dust and accidents could be mitigated. The PP shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the Project. No road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.	Following Coal transportation roads has been widened and strengthened by the project proponent at the project cost. <ul style="list-style-type: none"><li>❑ Transportation towards Kanika Railway Siding: widening and strengthening of total stretch of 25Km has been completed in July 2020 with an investment of 209.40 Cr.</li><li>❑ Transportation road from Siarmal to Bankibahal (Total length- 2.7Km) has been completed in January 2020 with an investment of 16.36 Cr.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
ix.	Contd...	<ul style="list-style-type: none"><li>❑ Concrete road to Sardega railway siding for a total length of 6Km has been completed with an investment of 19.50 Cr.</li><li>❑ Sardega siding has been commenced at Basundhara Area for a capacity of 20Mty in the period of 2018-19, with an investment of 1146.99 Cr.</li><li>❑ Besides this, a separate coal corridor is being constructed from Bankibahal to Bedabahal for an additional investment of 289 Cr.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
x.	Likewise, alteration or re-routing of foot paths, pagdandies, cart roads, and village infrastructure/public utilities or roads (for purposes of land acquisition for mining) shall be avoided to the extent possible and in case such acquisition is inevitable, alternative arrangements shall be made first and then only the area acquired. In these types of cases, Inspection Reports by site visit by experts may be insisted upon which should be done through reputed Institutes.	<ul style="list-style-type: none"><li><input type="checkbox"/> 2.7 Km of Sundargah-Raigarh road has been diverted for the mining purpose.</li><li><input type="checkbox"/> The diverted road has four lanes. Two lanes has been concreted for coal transportation and two lanes has been black topped for the use of villagers and passerby.</li><li><input type="checkbox"/> A mobile fog canon of capacity 12KI is engaged in this road for effective dust suppression.</li><li><input type="checkbox"/> Also, plantation of 1975nos has been done in consultation with DFO Sundargah, for a distance of 2.7Km.</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**

S.No.	Conditions	Current Status of Compliance
xii.	As CSR activities by Companies including the Mining Establishments has become mandatory up to 2% of their financial turnover, Socio Economic Development of the neighborhood Habitats could also be planned and executed by the PPs more systematically based on the 'Need based door to door survey' by established Social Institutes/Workers on the lines as required under TOR. R&R Plan/compensation details for the Project affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view.	<ul style="list-style-type: none"><li><input type="checkbox"/> In MCL, fund for CSR are allocated based on 2% of average net profit of the company for the three immediate preceding financial years or Rs. 2.00 per tonne of coal production of previous year whichever is higher.</li><li><input type="checkbox"/> The unspent amount in CSR budget in a particular year will not lapse and shall be added with CSR budget of subsequent years for MCL.</li><li><input type="checkbox"/> All the funding goes to Odisha. 80% within 25 km of command areas of MCL in the districts of Jharsuguda, Sundargarh, Angul, and Sambalpur and remaining 20% in rest of Odisha</li></ul>

**OM No.-Z-11013/5712014-IA.II (M) dated 29th October, 2014**



S.No.	Conditions	Current Status of Compliance																							
xii.	<p>Contd...</p> <p>In respect of SC's /ST's and other weaker sections of the society in the study area, a need based sample survey, family wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village located in the mine lease area will be shifted or not. The issues related to shifting of village including their R&amp;R and socio-economic aspects should be discussed in the EIA Report."</p>	<table border="1"> <thead> <tr> <th colspan="4" data-bbox="889 348 1317 380">CSR Spent by Basundhara Area in Rs. Lakh</th> </tr> <tr> <th data-bbox="889 394 1008 426">Year</th> <th data-bbox="1008 394 1117 426">2019-20</th> <th data-bbox="1117 394 1226 426">2020-21</th> <th data-bbox="1226 394 1317 426">2021-22</th> </tr> </thead> <tbody> <tr> <td data-bbox="889 447 1008 583">Prescribed CSR budget (as per 2% law)</td> <td data-bbox="1008 447 1117 583">306.38</td> <td data-bbox="1117 447 1226 583">178.56</td> <td data-bbox="1226 447 1317 583">722.80</td> </tr> <tr> <td data-bbox="889 583 1008 636">Actual CSR Spent</td> <td data-bbox="1008 583 1117 636">583.12</td> <td data-bbox="1117 583 1226 636">183.68</td> <td data-bbox="1226 583 1317 636">722.80</td> </tr> <tr> <td></td> <td data-bbox="1008 636 1117 688">190.33%</td> <td data-bbox="1117 636 1226 688">102.87%</td> <td data-bbox="1226 636 1317 688">100%</td> </tr> </tbody> </table>				CSR Spent by Basundhara Area in Rs. Lakh				Year	2019-20	2020-21	2021-22	Prescribed CSR budget (as per 2% law)	306.38	178.56	722.80	Actual CSR Spent	583.12	183.68	722.80		190.33%	102.87%	100%
CSR Spent by Basundhara Area in Rs. Lakh																									
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## COMPLIANCE REPORT/ ACTION TAKEN REPORT AGAINST THE GENERAL RECOMMENDATION OF CSIR-NEERI

The following recommendations were made by CSIR-NEERI after the site inspection on date- 20.11.2020 & 21.11.2020, against the work order issued by MCL issued vide- MCL/HQ/ENVT & FOREST/2020-21/110, date- 08.06.2020, and as per the final report submitted by CSIR-NEERI on date 09.04.2021. The compliance report/Action taken report against the general recommendation made by NEERI is as follows:

S.No.	General Recommendation by CSIR-NEERI	Compliance report	Status
1	Environmental Data Management System must be streamlined in terms of soft and hard copy information/file management system for quick dissemination and delivery of information. All the environmental monitoring data including all historical data should be accessed, compiled and should be maintained with various graphical representations for the ease of quick overview.	All the environmental management data has been accessed, complied and maintained in graphical representations for the ease of quick review, as per the recommendation. The data in graphical form has been communicated to MoEF&CC, as per the recommendation.	Complied
2	Next milestone in environmental management should be installation and operation of an STP, upgradation of present ETP/installation of new ETP, which together would take care of sewage/grey water management and mine discharges	Domestic waste water is not being generated inside the mines. The ETP has been upgraded with inclusion of primary settling tank with alum dosing system, Oil skimming unit, rapid sand filter unit in addition to the clarifier tank, as per the recommendation.	Complied
3	A meteorological station may be maintained in the mining area for monitoring local rainfall and evapotranspiration that influence the water cycle, apart from knowing wind	Three no. of CAAQMS has been installed in the periphery of the Kulda mines to monitor the meteorological parameters like wind velocity, direction of wind, rainfall, relative humidity, temperature etc. Hence, the recommendation has been complied	Complied

	patterns that aid in dust dispersion and air pollution.		
4	Staff gauge must be installed in sumps to monitor water level which will help in understanding augmentation, water usage, loss and water budgeting of the mine. Regular monitoring and data keeping on water level must also be ensured.	Staff gauge has been provided in the mine sump to monitor the water level. The water level in the mine sump is being monitored regularly as per the recommendation and log book is being maintained for the same.	Complied
5	All the pipelines that either pump out or load water within the mining area, including the sumps, must be color coded /differentially marked for the ease of inspection and auditing purpose.	The piping networks are placed underground. For ease of understanding the pipeline which are above the ground and visible to eyes have been provided with color coded flags that will eventually help in differentiating the pipelines during inspection.	Complied
6	All specific points e.g. plantation areas, car washing bays, ETP, STP, view point, recharge structures, CHP and any other special feature/designated area must be marked with large permanent boards at the entrance area, showing detail information (with date, year of commissioning) in large font over contrasting background for ease of inspection and auditing. No vinyl prints must be used, as these are temporary in nature and are faded and torn in due course of time.	Large permanent boards has been provided at the entrance area, showing details of plantation areas, ETP, STP, view point, coal stock area, CHP, Mine sump, administrative buildings, MTK office, etc. for the ease during inspection & auditing as per the recommendation. And vinyl prints has been avoided, instead the mine has provided permanent boards for display and directions.	Complied
7	Groundwater recharge structures must be erected at all suitable places, keeping in view the land levels, local catchments and watershed areas.	There are presently 3nos. of ground water recharging structures at the area. Proposal has been initiated for the construction of more ground water recharge structure around the mines to replenish the ground water level, in addition to the above.	Being Complied.
8	Road surface, wherever	The permanent haul roads have been	Being

	rough/bumpy, should be made smoother by proper grading for better vehicle movements	concreted. This is a regular continual practice in mines to monitor the pot holes in the haul roads and to rectify the same at priority basis to avoid spillage. Also, as per recommendation of NEERI, mines have been provided with WMM haul roads. And further the permanent haul roads has been indentified and shall be concreted before 30.09.2022	complied.
9	Persons deployed at the mine through departmental as well as contractors should be made to use personal protective gears, especially masks to protect them from micro-fine coal, siliceous dust and viral infections. During internal field visits/ inspections, the same should be monitored and enforced.	All the mining personnel are provided with personal protective gears, including contractual man power. Special protective gears like ear muffs, rubber gloves, goggles, face shield etc., are distributed as per the occupation of the personnel. The implementation of this condition is being monitored at regular frequency by shift in-charges headed by safety officer. Further for awareness, safety lectures are given at the beginning of each shift to prevent risks, & associated hazards.	Complied.
10	One-way traffic system for dumpers/dump trucks or private vehicles for haulage of OB and coal is not adequate. Same road is being used by light and heavy vehicles including U-turns, which is quite unsafe. Hence, haul road management needs improvement.	Divider has been made inside the mines to differentiate the road for HEMM and light vehicle. And shift in-charges are made responsible for following the traffic rules inside the mines. This work has been taken up and completed as per the recommendation.	Complied.
11	For controlling and mitigation of dust and fumes during drilling and blasting operations, trial blast should be conducted as a part of R&D study. Results should be reported to the concerned authority at the earliest possible time.	Major production is being carried out using surface miner technology. The total production using surface miner technology is 100% in the FY 2021-22. And further, the blasting is carried out only on OB face using controlled blasting techniques either electrically or non-electrically delayed blasting techniques. Dust and fumes are generally prevented by using sand fillings during blasting. The blasting is done as per DGMS guideline.	Complied.
12	Implementation of mechanically covered trucks,	All the trucks leaving Kulda OCP is being completely covered with the Tarpaulin cover.	Complied.

	in order to minimize the pollution load due to transportation of coal and OB via road transport needs to be implemented in due course of time.	It is being strictly ensured at the check gates by the security guards and the trucks are only allowed to pass the security check if it is fully covered with Tarpaulin.	
13	Few of the external OB dump slopes are severely eroded and several rills and gullies were noticed on the slopes. Such erosion need to be stopped immediately by making a series of gully plugs/log wood check dam/brush wood check dams, so that the erosion of sediments and loose boulders from the OB dumps can be arrested.	Work has been awarded to DFO, Sundargarh worth Rs. 65 Lakh, for grassing and implantation of gully plugs in slopes to avoid gully erosions. The same shall be implemented in the next monsoon of 2022-23.	Being Complied.
14	The PP may consider taking appropriate action to make proper terracing and put geotextile at vulnerable areas followed by broadcasting of seeds of local grasses for proper stabilization of dump slopes.	Work has been awarded to DFO, Sundargarh worth Rs. 65 Lakh, for grassing and implantation of gully plugs in slopes to avoid gully erosions. The same shall be implemented in the next monsoon of 2022-23.	Being Complied.
15	Retaining/toe walls and garland drains, wherever not present at the bottom of OB dumps, need to be constructed	Retaining wall of 500m has been constructed at the toe of external OB dump as per the recommendation of CSIR-NEERI. Further, proposal for construction of gabion wall for a length of 1000m has been initiated and shall be completed before 31.12.2022	Being Complied.
16	Grown-up trees in plantations must be marked with common and specie names in metal placards pinned to the trunks.	The plantation done in the mines are at a height of 1-2m and the girth is less than 30cm. The said recommendation shall be implemented once the trees achieve its height and girth.	Being Complied.
17	All the future afforestation/plantation activities on the backfilled OB dumps, on the external	The plantation work has been awarded to the DFO, Sundargarh. And the forest department only uses native species for plantation. Hence, this recommendation is under	Complied.

	OB dumps, degraded areas, township, railway sidings, transport/service roads are to be undertaken by using only native plant species.	compliance.	
18	Gap plantation should be undertaken wherever possible in the township area, wastelands, OB dumps and other degraded areas.	Area for gap plantation has been identified and communicated to DFO, Sundargarh for taking up the plantation work. It shall be completed in the next monsoon.	Being Complied
19	Cooperatives should be formed and supported in R&R and surrounding villages. Training should be provided for skill-up gradation and diversification of livelihood for increasing livelihood opportunities to make people self-dependent.	Numerous projects are under progress for the skill development of the people from the peripheral villages. Some of the projects are like – desi-beej ghar, ahar Mandal project, handyman project etc. People are enthusiastically participating in this program, which makes this recommendation fulfilled.	Complied.
20	Along with the financial support for infrastructure to educational centers, the proponent can also support for development of library, IT facilities and medical diagnostic laboratories.	<ol style="list-style-type: none"> <li><b>Providing 20 nos Computer set, 20 nos UPS to Jawahar navodaya Vidyalaya, Zinc Nagar, Sundergarh under CSR Scheme of Basundhara Area:-</b> To enhance IT facilities and promoting IT education, MCL has provided 20 nos. of computer set to Jawahar Navodaya Vidyalaya, Zinc Nagar, Sundergarh under its CSR at a cost of Rs. 8.90 lakhs. It will benefit all the students of school.</li> <li><b>Providing 15 nos Computer set, 15 nos Computer printer, 15 nos Computer UPS and 15 nos Computer table to establish e-learning centers for poor and deprived children of Sundargarh Town under CSR Scheme of Basundhara Area:-</b> District authority Sundergarh developed a library in Sankara, Sundergarh for the benefit of poor and deprived children. But the study of the children from limited library books is not sufficient to complete the learning process. To overcome this, MCL under its CSR provided 15 nos. of computer,</li> </ol>	Complied

		<p>UPS and computer table to start an e-learning center in the library. Around 500 children of Sundergarh town will get benefit out of this project.</p> <p>3. <b>Renovation of Kanika Library:-</b> MCL approved the project 'Renovation of Kanika library' which was proposed by RPDAC, Sundergarh. This project will be taken up on deposit basis. Once the detailed estimate received from district administration, the amount will be deposited.</p> <p>4. <b>Health camps and diagnostic camps:-</b> Under CSR, Basundhara Area conducts different health camps and medical diagnostic camps in the peripheral villages for the benefit of the villagers. Every year different camps are being conducted in different villages.</p>	
21	Overhead tanks may be constructed for supplying drinking water to every household in R&R site and surrounding villages.	Overhead tanks are provided at the R&R site of Kulda OCP. Besides this, MCL is also supplying drinking water to 17 nos. of peripheral villages each year.	Complied.
22	Sports (football, cricket, volley ball, badminton and indoor games) and exercise (yoga, gymnasium) related activities may also be encouraged from CSR funds in the surrounding areas	Every year under CSR in the head rural sports development, the peripheral villages are being provided with sports material and facilities like football ground and volley ball courts is being provided by MCL, and the expenses are being communicated to MoEF&CC also.	Complied.

**Annexure- XXXIII**

<b>Time bound action plan for activities mentioned in EC condition for an budget of Rs. 17.59 Cr.</b>		
<b>#</b>	<b>Control measures</b>	<b>status</b>
1	Mist sprinklers (188nos.)	Proposal initiated and is expected to be completed by 31.03.2023
2	Mobile water tanker 12 kl-1 nos	Tender under process. Tentative date of completion is Sept'2022
3	Static fog canon (8 nos.)	2 nos. of static fog canon is being installed and shall be completed by Sept' 2022
4	Mechanical road sweeper (4 nos.)	Tender stage, shall be commenced by 31.08.2022
5	Wheel washing system	3 nos. of wheel washing system has been constructed and completed.
6	Wind Barrier System	Tender stage, shall be completed by 31.03.2023
7	Plantation of 27513 nos.	Sanction order issued to DFO, shall be taken up in the upcoming monsoon and completed by 30.09.2022

**Annexure – XXXIV**



**Concrete road of length 2700m and width 12m from Bankibahal towards Raigarh for HMV**



**Black topped road of length 2700m and width 8.5m from Bankbahal towards Raigarh for LMV**



**a. Tumulia village road of length 1995m and width 10m**



**b. Tumulia village road of length 1995m and width 10m**