

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

OFFICE OF THE PROJECT OFFICER
LAKHANPUR OPENCASST PROJECT
LAKHANPUR AREA
PO- UBUDA, VIA- BELPAHAR (768 217)
DIST-JHARSUGUDA, (ODISHA)
Mail Address: po-lkpp.mcl@coalindia.in
PH-06645-605900, 06645-605914
Fax- 06645-233353



MCL

Ref. No: MCL/LKPA/LKPOCP/Envt./2023-24 4248

Date: 29.11.2023

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To

The Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change, Integrated Regional Office,
A/3, Chandrasekharpur, Bhubaneswar – 751023

Kind Attention:

Director (S),
Ministry of Environment, Forest and Climate Change, Integrated Regional Office
A/3, Chandrasekharpur, Bhubaneswar-751023

Sub: Half yearly Environmental Clearance compliance report with respect to Lakhanpur Opencast Project, Lakhanpur Area, MCL for the period April 2023 – September 2023.

Ref: No- J- 11015/391/2012-IA- II(M) dated 18th September 2023.

Dear Sir,

Enclosed herewith please find the Half yearly Environmental Clearance compliance report with respect to Lakhanpur Opencast Project, Lakhanpur Area, MCL for the period April 2023 – September 2023.

Encl: As above

Thanking you

Yours faithfully,


Project Officer
Lakhanpur OCP
Project Officer
Lakhanpur OCP
Lakhanpur Area, MCL

Copy to:

1. Member Secretary, Odisha State Pollution Control Board, Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar, Odisha -751012.
2. Regional Officer, Odisha State Pollution Control Board, (Department of Forest & Environment, Govt. of Odisha) Plot No.-370 / 5971, At. -Babubagicha (Cox Colony), St. Mary Hospital Road, Post- Industrial Estate, Jharsuguda - 768203.
3. General Manager, Lakhanpur Area
4. General Manager (Envt. & Forest), MCL HQ.
5. Area Environment Officer, Lakhanpur Area.
6. Office copy

Name of the Project: Lakhanpur Open Cast Project, Mahanadi Coalfields Limited.

Environment Clearance Letter No. and date: J- 11015/391/2012-IA- II(M) dated 18th September 2023.

Period of Compliance Report: April 2023 – September 2023


S.NO	CONDITIONS	COMPLIANCE
i.	PP shall complete the installation mechanized system for 10 MTPA before 31 st August 2023 & for 15 MTPA (additional) SILO loading system shall be installed on or before January 2024.	The construction and installation of Mechanized Transportation System (Pipe Conveyor), feeding to IB Valley Coal Washery of 10 MTPA capacity has been completed and it is under trial run stage. The construction of SILO Loading System of 10 MTPA Capacity at a cost of Rs. 164 Cr. is under progress. Physical Progress – 95.20% Financial Progress – 91.51%.
ii.	No mine water shall be discharged into Lilari stream. PP shall treat mine water through ETP. The treated water shall be utilized for purpose of plantation, workshop etc.	No mine water is being discharged into the Lilari stream and is being stored in the mine sumps. The mine sump water is used for dust suppression and plantation activities. Further upstream and downstream water quality of Lilari stream is being monitored regularly and report is enclosed as Annexure -XI.
iii.	PP shall monitor the functionality of ETP and regular monitoring of effluent on six monthly basis and the progressive reports shall be submitted to the IRO, MoEF&CC.	The effluent discharge and functionality of ETP is being monitored at regular intervals. The effluent is monitored in ETPs, MDTPs, and Mine sumps as per Coal Industry Standards vide GSR 742 (E) dated 25.9.2000. The details of the monitoring data from April 2023 to September 2023 are attached as Annexure-IX.
iv.	PP shall complete the land acquisition, rehabilitation & settlement programme for the people displaced in the past.	Odisha Rehabilitation and Resettlement policy, 2006 and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 are being followed which include Employment, Cash compensation in place of employment, Plot, Cash compensation in place of plot, Annuity, House building assistance for the eligible persons as per policy. There are total 1248 displaced families out of which 1129 have already been shifted and a total of 1050 people have been provided employment.
v.	PP shall implement the necessary control measures to control the fugitive dust emission. The coal dusts should not be deposited on the water of village wells and ponds.	Necessary control measures to control the fugitive dust emission have been implemented: A. Transportation of coal is being carried out on the dedicated coal transportation roads and all road sale coal trucks are covered with tarpaulin. B. A total of 118 fixed sprinklers have been installed along the Coal Transportation roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard1 to Ubuda Chowk, 26 Nos. from Lilari bridge to Manager office, 45 Nos. in Main haul road and 15 nos. in Coal stock Yard in the project) C. Mobile water tankers mobile truck mounted fog cannons (12 nos.) are deployed on haul roads, mining areas, and transportation

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		<p>roads for dust suppression by both departmental and contractual means. Water tankers- Departmental: 28KL (8 Nos.), 9KL (4 Nos.) Contractual: 20KL (19 Nos.), 12KL (2 Nos.), 8 KL (2 Nos.),</p> <p>D. 9 nos. of 100m throw trolley type fog cannon have been deployed at Coal stocks and railway siding for dust suppression</p> <p>E. Two Mist type Instant shower systems have been installed and coal-loaded trucks to sidings are passed through this to avoid dust.</p> <p>F. A Wheel Washing System has been installed at the exit of quarry for road sale trucks to pass through and avoid dust.</p>
vi.	PP shall start reclamation of the mine with combination of top soil and Fly ash with the development of grazing facility and other activities to be considered from the progressive mine closure plan.	De-coaled area is being backfilled with overburden and the top soil is being spread out on upper surface for biological reclamation with grasses and plantation. Grass plantation is being carried out on OB Slopes. However, Lakhanpur Opencast project is a part of upcoming Integrated Lakhanpur-Belpahar-Lilari Opencast Project for which overburden and reclaimed areas has to be rehandled.
vii.	PP shall immediately submit the status of the closure of the mine as per the approved progressive mine closure plan.	<p>Mining is being carried out as per the approved Mining Plan (including Mine Closure Plan), Lakhanpur OCP Expansion, Phase-II (22.5MTY), Approved by MCL Board vide No. MCL/SBP/CS/BD-248/Exct/2022/12600 dated 22.06.2022. (Annexure-IV).</p> <p>The excavated area is progressively being backfilled and reclaimed technically and biologically.</p> <p><u>Progressive till September 2023</u></p> <p>Excavated area: 977.12ha Decoaled area: 665.21 ha Backfilled area: 651.21 ha Technically reclaimed: 305.37 ha Biologically reclaimed: 187.915 ha</p>
viii.	PP shall engage the electric vehicle or small vehicles for internal roads within mine using green fuel. No vehicle shall be used based fossil fuel.	<p>A trial of Liquefied Natural Gas (LNG) powered Dumper have been conducted in Lakhanpur OCP towards an alternate of Diesel.</p> <p>At present vehicles used in mine operations are run on Ethanol blended Diesel.</p> <p>Electric vehicles or Vehicles running on green fuel will be promoted gradually.</p>
ix.	PP shall fulfil the water requirement for agricultural purpose by creating artificial ponds and shall fulfil the drinking water requirement after treatment through dedicated well or alternate sources for villagers.	<p>04 Nos. of Artificial ponds have been constructed in nearby villages for agricultural purposes and ground water recharge.</p> <p>13 Nos. of Nearby villages are being provided with drinking water for 90 days during summer season. and 08 nos. of villages i.e. Ubuda, Tingismal, Sahajbahal, Luhurapada, Karlajori, Darlipali, Karlajori and Khalipali are being supplied with drinking water throughout the year.</p>
x.	PP shall transport the 4.0 MTPA of coal through dedicated road without passing through village or any sensitive areas.	<p>Coal Dispatch in Apr 2023- Sep 2023: {94,80,513.80 Tones (9.48 MT)}</p> <p>Through Road – 19,61,435.94 Tone (1.96 MT) (20.68%)</p>

	<p>Mine authorities shall repair and maintain roads on six monthly basis to avoid any spillage of coal on the roads. No village road shall be used as well as no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc.</p>	<p>Rail – 75,19,077.86 Tone (7.51 MT) (79.31%)</p> <p>Transportation of coal is being carried out on the dedicated coal transportation roads which are under the mine lease area of the project and far away from the sensitive location such as schools, hospitals etc and all road sale coal trucks are covered with tarpaulin. Further, Transportation roads are maintained and repaired regularly.</p>																																													
xi.	<p>The project proponent shall install effective dust suppression system all the suitable location in the other parts of the mining lease to arrest the fugitive dust emission.</p>	<p>A total of 118 fixed sprinklers have been installed along the Coal Transportation roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard1 to Ubuda Chowk, 26 Nos. from Lilari bridge to Manager office, 45 Nos. in Main haul road and 15 nos. in Coal stock Yard in the project)</p> <p>Mobile water tankers mobile truck mounted fog cannons (12 nos.) are deployed on haul roads, mining areas, and transportation roads for dust suppression by both departmental and contractual means. Water tankers-</p> <p>Departmental: 28KL (8 Nos.), 9KL (4 Nos.) Contractual: 20KL (19 Nos.), 12KL (2 Nos.), 8 KL (2 Nos.),</p> <p>9 nos. of 100m throw trolley type fog cannon have been deployed at Coal stocks and railway siding for dust suppression</p> <p>Two Mist type Instant shower systems have been installed and coal-loaded trucks to sidings are passed through this to avoid dust. A Wheel Washing System has been installed at the exit of quarry for road sale trucks to pass through and avoid dust.</p>																																													
xii.	<p>The project proponent shall arrange Periodical health check-up camp and in long term shall arrange permanent health facility near village area.</p>	<p>Regular medical camps are being conducted in nearby villages. The health checkup, medicines, and consultation are provided free of cost. From the year 2019-20 to till date health camps have been conducted in nearby 20 villages and a total of 3765 people have been benefited. A list of latest health camps conducted in nearby villages is tabulated below:</p> <table border="1" data-bbox="699 1413 1337 2047"> <thead> <tr> <th>Village</th> <th>Date</th> <th>No of beneficiar ies</th> </tr> </thead> <tbody> <tr> <td>Chaurimahul</td> <td>09/08/2019</td> <td>124</td> </tr> <tr> <td>Kusaraloi</td> <td>21/08/2019</td> <td>164</td> </tr> <tr> <td>Junian</td> <td>11/09/2019</td> <td>68</td> </tr> <tr> <td>Soldia</td> <td>03/02/2023</td> <td>190</td> </tr> <tr> <td>Kudaloi</td> <td>16/10/2019</td> <td>187</td> </tr> <tr> <td>Khadam</td> <td>06/11/2019</td> <td>159</td> </tr> <tr> <td>Jorabaga</td> <td>24/05/2023</td> <td>380</td> </tr> <tr> <td>Kirtimal</td> <td>26/11/2019</td> <td>380</td> </tr> <tr> <td>Kheraulbahal</td> <td>28/11/2019</td> <td>100</td> </tr> <tr> <td>Kirarama</td> <td>20/02/2023</td> <td>218</td> </tr> <tr> <td>Kudaloi</td> <td>13/12/2019</td> <td>477</td> </tr> <tr> <td>Karlajuri</td> <td>07/04/2023</td> <td>139</td> </tr> <tr> <td>Khaliapali</td> <td>17/01/2020</td> <td>77</td> </tr> <tr> <td>Ubuda</td> <td>07/02/2020</td> <td>80</td> </tr> </tbody> </table>	Village	Date	No of beneficiar ies	Chaurimahul	09/08/2019	124	Kusaraloi	21/08/2019	164	Junian	11/09/2019	68	Soldia	03/02/2023	190	Kudaloi	16/10/2019	187	Khadam	06/11/2019	159	Jorabaga	24/05/2023	380	Kirtimal	26/11/2019	380	Kheraulbahal	28/11/2019	100	Kirarama	20/02/2023	218	Kudaloi	13/12/2019	477	Karlajuri	07/04/2023	139	Khaliapali	17/01/2020	77	Ubuda	07/02/2020	80
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xiii.	PP shall complete plantation on OB dump areas along with roadside avenue plantation.	<p>There is one External OB dump in Lakhanpur Opencast Project of 17.5 Ha which have been completely biological reclaimed.</p> <p>Backfilled area of 187.915 Ha has been completely biological reclaimed and 6.93 Rkm Avenue Plantation along the roadside have been done. However, Lakhanpur Opencast project is a part of upcoming Integrated Lakhanpur-Belpahar-Lilari Opencast Project for which overburden and reclaimed areas has to be rehandled.</p>																		
xiv.	PP shall provide free medical facilities for the local villager's along with the ambulance facilities.	<p>Regular medical camps are being conducted in nearby villages. The health checkup, medicines, and consultation are provided free of cost. From the year 2019-20 to till date health camps have been conducted in nearby 20 villages and a total of 3765 people have been benefited.</p>																		
xv.	PP shall establish a technical training institute in the area to train the local youth for better employment. A report shall be prepared & submitted upon the status of the training session already conducted in order to provide livelihood and skill development to near-by villagers to make them employable.	<p>An MoU has been made with BAIF (Bharatiya Agro Industries Foundation) for the "Comprehensive Community Development Programme" through various schemes such as animal husbandry, sustainable agricultural practices, and workshops for Quality-of-life improvement, etc. in 10 villages of Jharsuguda district (Lachhipali, Parasian, Kadamdhee, Dudugaon, Kuruebahal, Jamugaon, Thebra, Samarbaga, Baurkhol, Sagaripali) for five years.</p>  <p>Further vocational training programs and apprenticeship training programs are being organized at the project level. The land oustees employed in the company are being trained for Skill up-gradation through ITI programs.</p>																		
xvi.	PP shall complete the dense plantation along mine roads, on OB dumps and non-dump areas with local species particularly of Sal tree/species. PP shall develop 10 ha of Sal nursery in the project area and yearly minimum 10,000 saplings to be distributed among near villagers for afforestation purpose.	<p>There is one External OB dump in Lakhanpur Opencast Project of 17.5 Ha which have been completely biological reclaimed with native species.</p> <p>Backfilled area of 187.915 Ha has been completely biological reclaimed with native species and plantation density kept at 2500 plants per hectare.</p> <p>6.93 Rkm Avenue Plantation of local species along the roadside have been done.</p> <p>Further, Plantation of Native species and fruits bearing plants have been done in outside the mine lease area of 120.675 Ha in nearby villages through DFO Jharsuguda.</p> <p>6000 nos. of Fruit bearing Plants saplings are being distributed among the villagers of nearby villages for Vriksharopan Abhiyaan 2023-24</p>																		

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		Nursery Development of Sal and other species will be taken up in consultation with State Forest Department.
xvii.	PP shall make the pucca roads within the mine lease area and same should be maintained time to time.	14.20 Km of Concrete roads have been constructed separately within the mine lease area for coal transportation and other vehicle movement and maintained time to time. Haul Roads in the quarry area are properly maintained by grading and other means.
xviii.	PP needs to submit the compliance of SoP issued by CPCB for dumping of mine void of fly ash.	No fly ash is being dumped into the mine void.
xix.	PP needs to submit the physical and financial target for the implementation of the action plan for conservation and protection of endangered flora and fauna.	The Environmental Impact Assessment and Environmental Management Plan were prepared by CMPDI, and it was found that no endangered flora/ fauna is found in the mining area of the project. Site-specific wildlife conservation plan for the project has been approved by the Conservator of Forests, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5 th May 2011.)
xx.	PP needs to submit the detail report upon the steps already taken or to be taken toward medical health check-ups for Mine workers.	People working in mine are undergoing Initial Medical Examination and then in every year 20% of total employees are Periodically medical examined so that within a five year interval all employees could be medically re-examined. Again, person those who have attended the age of 45 years and above are medically re-examined in every three years interval. During 2023-24 till September 2023, the Initial Medical Examination was carried out for 235 contractual employees. 156 departmental employees were engaged in Periodical Medical Examination and no notified disease was diagnosed. The workers are being checked for occupational disease, hearing impairment, and others in MCL, Central Hospital, Mandalia, and Jharsuguda. The report is being submitted to ERO, MoEF&CC on a half-yearly basis. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.
xxi.	The project proponent shall include development of solar parks, eco-friendly-parks, fish farming pond, picnic spot and sports compound in its Mine Closure Report. Further, if possible, maximum possible area of quarry shall be brought upto original ground level and handover the land to Project affected Families.	Lakhanpur Opencast project is a part of upcoming Integrated Lakhanpur-Belpahar-Lilari Opencast Project for which overburden and reclaimed areas of Lakhanpur OCP has to be rehandled as per mining plan of the Integrated Lakhanpur-Belpahar-Lilari Opencast Project. Maximum possible area of quarry will be brought upto original ground level for agricultural purposes as per mine closure plan of the Integrated Lakhanpur-Belpahar-Lilari Opencast Project. At Present Rooftop Solar panels of 132.66 KWp capacity have been installed at different administrative buildings of Lakhanpur Area. Further, A work order for installation and maintenance of Solar Plant for a capacity of 1.21 MWp has been issued at a cost of Rs. 4.82 Crores.
xxii.	Proper garland drain and retaining wall should be made (if required) and same should be revived from time to time.	Catch drains have been made all around the Coal stocks, mine working areas, roads, and OB dump. The water from catch drains is diverted to mine sumps for settling and used for firefighting and dust suppression activities. Garland drains (4.5km x2mx 2m) have

		<p>been excavated along the periphery of the mine boundary to prevent the inrush of storm water.</p> <p>The drains are de-silted and maintained at routine intervals. At the onset of every monsoon, a monsoon preparation plan is made based on the rainfall data.</p>										
xxiii.	<p>The PP shall not use the ground water for any type of mine closure activity. PP shall maintain one permanent Piezometer for monitoring of ground water level.</p>	<p>Only mine sump water is used for mine activities. All the surface runoff water in mine lease area is channelized into the mine sump for storage and then used for dust suppression and other mine activities.</p> <p>Monitoring of ground water level and quality is being carried out in village wells and piezometers. A total of 17 piezometers have been constructed in IB valley coalfields out of which 2 piezometers are under the area of the Lakhanpur project which is located at 21°45'49.21"N 83°47'42.22"E and 21°46'51.61"N 83°48'47.60"E. Ground water depth level is also being monitored in nearby villages at every season (pre-monsoon, post-monsoon, monsoon, and winter).</p> <table border="1" data-bbox="778 898 1311 1061"> <tr> <td rowspan="2">24 May 2023</td> <td>Kansar</td> <td>3.86 m</td> </tr> <tr> <td>Khairkuni</td> <td>4.93 m</td> </tr> <tr> <td rowspan="2">17 August 2023</td> <td>Kansar</td> <td>1.82 m</td> </tr> <tr> <td>Khairkuni</td> <td>2.90 m</td> </tr> </table> <p>Piezometer level and water quality report are attached as Annexure-X. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.</p>	24 May 2023	Kansar	3.86 m	Khairkuni	4.93 m	17 August 2023	Kansar	1.82 m	Khairkuni	2.90 m
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xxiv.	<p>PP to shall complete the tree plantation particularly fruit bearing tree along the village road within six months from date of issue of EC to IRO, MoEF&CC. The plantation shall also be planted along the Mine boundary and Mine pit. A detailed report with GIS images of every six months subsequently be submitted in every six monthly report to justify the adequate tree plantation.</p>	<p>Plantation of Native species and fruits bearing plants have been done in outside the mine lease area of 120.675 Ha in nearby villages through DFO Jharsuguda</p> <p>There is one External OB dump in Lakhanpur Opencast Project of 17.5 Ha which have been completely biological reclaimed with native species.</p> <p>Backfilled area of 187.915 Ha has been completely biological reclaimed with native species and plantation density kept at 2500 plants per hectare.</p> <p>6.93 Rkm Avenue Plantation of local species along the roadside have been done.</p>										
xxv.	<p>PP shall ensure the uniform fee structure in nearby school of MCL for children of MCL employees as well as for other students.</p>	<p>The fee structure is fixed by school authorities and the project does not have a role in the fixation of the fees, however, the project encourages the participation of students of other schools in the various events conducted by the project.</p>										
xxvi.	<p>PP shall install 100 m jet spray length in order to arrest the heavy air pollution on the roads and other dust generating points. More number of Fog cannons, Road sweeper and Mobile water sprinklers to be used on road.</p>	<p>A total of 118 fixed sprinklers have been installed along the Coal Transportation roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard1 to Ubuda Chowk, 26 Nos. from Lilari bridge to Manager office, 45 Nos. in Main haul road and 15 nos. in Coal stock Yard in the project)</p>										

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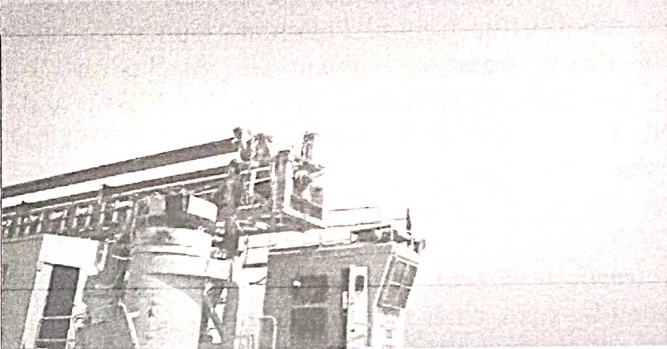
		<p>Mobile water tankers mobile truck mounted fog cannons (12 nos.) are deployed on haul roads, mining areas, and transportation roads for dust suppression by both departmental and contractual means.</p> <p>Water tankers- Departmental: 28KL (8 Nos.), 9KL (4 Nos.) Contractual: 20KL (19 Nos.), 12KL (2 Nos.), 8 KL (2 Nos.),</p> <p>9 nos. of 100m throw trolley type fog cannon have been deployed at Coal stocks and railway siding for dust suppression</p> <p>Two Mist type Instant shower systems have been installed and coal-loaded trucks to sidings are passed through this to avoid dust. A Wheel Washing System has been installed at the exit of quarry for road sale trucks to pass through and avoid dust.</p>
xxvii.	<p>Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs union of India & Ors vide its judgement dated 8th January, 2020 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 operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.</p>	<p>At present plantation of Grass species such as <i>Stylosanthes Hamata</i>, <i>Pennisetum pedicillatum</i> and <i>Chrysopogon zizanioides</i> are being carried out in OB slopes and topsoil stocks.</p> <p>Further, Lakhanpur Opencast project is a part of upcoming Integrated Lakhanpur-Belpahar-Lilari Opencast Project so re-grassing of left out area and restoration of the land to a condition that is fit for the growth of fodder, flora, fauna, etc. will be being carried.</p>
(a)	Statutory Compliance	
(i)	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act. 1986, in case of the diversion of forest land for non-forest purpose involved in the project.	Forest clearance has been obtained for an area of 233.43 ha vide letter No.8- 280 / 89 – FC Dated: 08/10/1990 and approval for change of land use plan for an area of 84.399 Ha (No.8- 280 / 89 – FC Vol. I Dated: 19/01/2012) and approval for change of land use plan for an area of 25.238 Ha (No.8- 280/ 89 – FC Vol. II Dated: 20/11/2018) has been obtained. No mining activities are being carried out in Forest land where clearance has not been obtained.
(ii)	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.	Not applicable. Further, Site-specific wildlife conservation plan for the project has been approved by the Conservator of Forests, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5 th May 2011.)

(iii)	The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).	Site-specific wildlife conservation plan for the project has been approved by the Conservator of Forests, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5 th May 2011. No schedule-I species was found in the mining area of the project.				
(iv)	The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.	Consent to Establish (No.22282/IND-II-CTE-6771 Dated: 29.11.2022) and Consent to Operate (No. 1874/IND-I-CON-1220 Dated: 09.02.2023) has been obtained from Odisha State Pollution Control Board for 22.5MTY.				
(v)	The project proponent shall obtain the necessary permission from the Central Ground Water Authority.	No Objection Certificate (NOC) to abstract groundwater w.r.t Lakhapur OCP was obtained vide no. CGWA/NOC/MIN/ORIG/2020/9248 which was valid till 08.12.2022. An application for NOC renewal has been submitted and under the progress.				
(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.	Solid/hazardous waste generated in the mines is being addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016. Lakhapur Opencast Project has been granted Hazardous Waster Authorization by State Pollution Control Board, Odisha vide no. IND-IV-HW-245/4020 dated 18.03.2023.				
(b) Air quality monitoring and preservation						
(i)	Continuous ambient air quality monitoring stations as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with	<p>A Continuous Ambient Air Quality Monitoring Stations have been installed and air quality is being monitored online.</p> <p>Ambient air quality is being monitored for the parameters of SPM, PM₁₀, PM_{2.5}, SO₂, and NO_x through air quality monitoring stations fixed after consultation and approval from the regional office, Jharsuguda of Odisha State Pollution Control Board (Annexure- I). The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envnt/2022-23/813 dated: 27.05.2023. Air quality monitoring is being carried out through 4 Nos. of stations in both the core zone and buffer zone of the project.</p> <table border="1" data-bbox="738 1899 1382 2018"> <thead> <tr> <th data-bbox="738 1899 1110 1939">Station Name</th> <th data-bbox="1110 1899 1382 1939">Coordinates</th> </tr> </thead> <tbody> <tr> <td data-bbox="738 1939 1110 2018">Near Quarry 3.</td> <td data-bbox="1110 1939 1382 2018">21.765694° N 83.813028° E</td> </tr> </tbody> </table>	Station Name	Coordinates	Near Quarry 3.	21.765694° N 83.813028° E
Station Name	Coordinates					
Near Quarry 3.	21.765694° N 83.813028° E					

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	<p>the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.</p>	<table border="1"> <tr> <td data-bbox="719 174 1098 264">Near Lilari Nallah Pump house</td> <td data-bbox="1098 174 1366 264">21.777147° N 83.850411° E</td> </tr> <tr> <td data-bbox="719 264 1098 338">South of Quarry 6</td> <td data-bbox="1098 264 1366 338">21.7370747° N 83.830168° E</td> </tr> <tr> <td data-bbox="719 338 1098 412">Southwest of Quarry 6</td> <td data-bbox="1098 338 1366 412">21.732742° N 83.791011° E</td> </tr> </table>	Near Lilari Nallah Pump house	21.777147° N 83.850411° E	South of Quarry 6	21.7370747° N 83.830168° E	Southwest of Quarry 6	21.732742° N 83.791011° E	<p>The air quality monitoring results for the period April 2023 to September 2023 are attached as Annexure-II. The heavy metal monitoring report for April 2023 – September 2023 is attached as Annexure-III.</p>
Near Lilari Nallah Pump house	21.777147° N 83.850411° E								
South of Quarry 6	21.7370747° N 83.830168° E								
Southwest of Quarry 6	21.732742° N 83.791011° E								
(ii)	<p>The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to Ministry/Regional Office and to the CPCB/SPCB.</p>	<p>Ambient Air Quality monitoring is being carried out in the core zone as per Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr is being sent to SPCB in CTO compliance and RO, MoEF&CC through EC compliance. The air quality monitoring results for the period April 2023 – September 2023 are attached as Annexure-II. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.</p>							
(iii)	<p>Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM2.5) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.</p>	<p>Necessary control measures to control the fugitive dust emission have been implemented:</p> <p>A. Transportation of coal is being carried out on the dedicated coal transportation roads and all road sale coal trucks are covered with tarpaulin.</p> <p>B. A total of 118 fixed sprinklers have been installed along the Coal Transportation roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard1 to Ubuda Chowk, 26 Nos. from Lilari bridge to Manager office, 45 Nos. in Main haul road and 15 nos. in Coal stock Yard in the project)</p> <p>C. Mobile water tankers mobile truck mounted fog cannons (12 nos.) are deployed on haul roads, mining areas, and transportation roads for dust suppression by both departmental and contractual means. Water tankers- Departmental: 28KL (8 Nos.), 9KL (4 Nos.) Contractual: 20KL (19 Nos.), 12KL (2 Nos.), 8 KL (2 Nos.),</p> <p>D. 9 nos. of 100m throw trolley type fog cannon have been deployed at Coal stocks and railway siding for dust suppression</p> <p>E. Two Mist type Instant shower systems have been installed and coal-loaded trucks to sidings are passed through this to avoid dust.</p> <p>F. A Wheel Washing System has been installed at the exit of quarry for road sale trucks to pass through and avoid dust.</p>							
(iv)	<p>The transportation of coal shall be carried out as per the provisions and</p>	<p>Coal transportation is being carried out through dedicated coal transportation roads as per the approved mining plan. Village roads</p>							

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	route envisaged to 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.	are not being used for coal transportation. Mobile tankers and Mobile Fog Cannons are deployed in haul roads, mining areas, and transportation roads for dust suppression by both departmental and contractual means. Graders are also being deployed to reduce ruts and potholes. Speed limits of the vehicles are restricted, and proper sign boards are placed to avoid accidents.
(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 centres.	Tipplers and HEMMs are maintained through scheduled maintenance thus reducing emissions. Roads also maintained ruts and potholes free by deploying graders. PUC "Pollution Under Control" certificate has been obtained from authorized pollution testing centers for all the transporting vehicles.
(vi)	Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.	 <p>No coal handling plant is being used, coal is being excavated through ecofriendly surface miners with a water sprinkling arrangement which eliminates drilling, and blasting of coal. The project has presently 10 Nos. of drills (6 Nos. diesel-powered drills and 4 Nos. Electric powered drills), all the drills are equipped with a dust extractor system and wet drilling arrangement. Further, all the drills are covered with dust traps to arrest fugitive dust emissions. A 2.14 km long closed pipe conveyor have been constructed for coal transportation to the washery to reduce the dust emission.</p>
(vii)	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.	No coal handling plant is being used; coal is being excavated through ecofriendly surface miners with a water sprinkling arrangement that eliminates drilling, blasting, and crushing of coal.
(c)	Water quality monitoring and preservation	
(i)	The effluent discharge (mine waste water, workshop effluent) shall be monitored in term of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as	The effluent discharge is monitored at regular intervals. The effluent is monitored in ETPs, MDTPs, and Mine sumps as per Coal Industry Standards vide GSR 742 (E) dated 25.9.2000. The details of the monitoring data from April 2023 – September 2023 are attached as Annexure-IX.

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	amended from time to time by the Central Pollution Control Board.											
(ii)	The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-1A.11 (M) dated 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 for Air, Water, and Noise is being displayed at the P O Office, Lakhanpur OCP through an electronic board and uploaded on the company's website.										
(iii)	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.	<p>Monitoring of ground water level and quality is being carried out in village wells and piezometers. A total of 17 piezometers have been constructed in IB valley coalfields out of which 2 piezometers are under the area of the Lakhanpur project which is located at 21°45'49.21"N 83°47'42.22"E and 21°46'51.61"N 83°48'47.60"E. Ground water depth level is also being monitored in nearby villages at every season (pre-monsoon, post-monsoon, monsoon, and winter).</p> <table border="1"> <tr> <td rowspan="2">24 May 2023</td> <td>Kansar</td> <td>3.86 m</td> </tr> <tr> <td>Khairkuni</td> <td>4.93 m</td> </tr> <tr> <td rowspan="2">17 August 2023</td> <td>Kansar</td> <td>1.82 m</td> </tr> <tr> <td>Khairkuni</td> <td>2.90 m</td> </tr> </table> <p>Piezometer level and water quality report for Apr 2023- Sep 2023 are attached as Annexure-X. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.</p>	24 May 2023	Kansar	3.86 m	Khairkuni	4.93 m	17 August 2023	Kansar	1.82 m	Khairkuni	2.90 m
24 May 2023	Kansar	3.86 m										
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17 August 2023	Kansar	1.82 m										
	Khairkuni	2.90 m										
(iv)	Mentoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.	<p>The surface water quality is being monitored both upstream and downstream of the nearby water bodies (Pulijore nallah and Lilari nallah). The surface water quality report monitoring data for the period April 2023- September 2023 is attached as Annexure XI.</p> <p>The half-yearly compliance reports are being submitted to RO, MoEF&CC. The report for the months April to September is submitted before 1st December and the report for the months October to March is submitted before 1st June. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.</p>										
(v)	Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.	<p>Only mine sump water is used for mine operations. All the surface runoff water in mine lease area is channelized into the mine sump for storage and recharge of ground water.</p> <p>Rain Water Harvesting structures have been constructed at the administrative building of Lakhanpur OCP for ground water recharge.</p>										
(vi)	Catch and/or garland drains and siltation ponds in adequate numbers and	Catch drains have been made all around the Coal stocks, mine working areas, roads, and OB dump. The water from catch drains is										

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	<p>appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de -silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.</p>	<p>diverted to mine sumps for storage/Settling and used for firefighting, dust suppression activities and green belt development. Garland drains (4.5km x2mx 2m) have been excavated along the periphery of the mine boundary to prevent the inrush of storm water.</p> <p>A yearly average of 1500-2000m³/day of water is used from mine sumps. The drains are de-silted and maintained at routine intervals. At the onset of every monsoon, a monsoon preparation plan is made based on the rainfall data.</p> <p>Plantation of native species and grass species have been carried out in OB dump top and OB slopes. Till date, 129.7 ha of the backfilled area and 17.5 ha of the external dump has been biologically reclaimed. Plantation details are enclosed in Form III of the report.</p> <p>As the shovel-dumper combination is being carried out, the dump achieves the required compaction. As the OB dumps are progressively advancing construction of a retaining wall at the toe of the dump is not possible and catch drains have been provided. However, a retaining wall for 100m is made around the External dump- Gram Devi dump.</p>
(vii)	<p>Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirements of nearby village(s) after due treatment conforming to the specific requirement (standards).</p>	<p>All the surface runoff water in mine lease area is channelized into the mine sump for storage and recharge of ground water.</p> <p>Rain Water Harvesting structures have been constructed at the administrative building of Lakhanpur OCP for ground water recharge.</p> <p>04 nos. of water ponds have been constructed in nearby villages for villager's water requirements. Further, drinking water is being supplied to 63 villages on direct basis from MCL.</p>
(viii)	<p>Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.</p>	<p>An ETPs of 240m³/day capacity have been established in Workshop with Skimmer belt unit, Aeration tank, and Multimedia filter with Zero discharge circuit.</p> <p>A Mine discharge treatment plant of 1080m³/day capacity has been installed in the project.</p> <p>STP of 1.7 MLD is established in the residential colony and soak pits are also constructed.</p> <p>The effluent from ETP, STP and MDTP is being monitored at regular intervals. Pictures enclosed as Annexure- V. And report is attached as annexure -IX.</p>
(ix)	<p>The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt</p>	<p>Catch drains have been made all around the Coal stocks, mine working areas, roads, and OB dump. The water from catch drains is diverted to mine sumps for storage and settling. Catch drains are desilted regularly.</p>


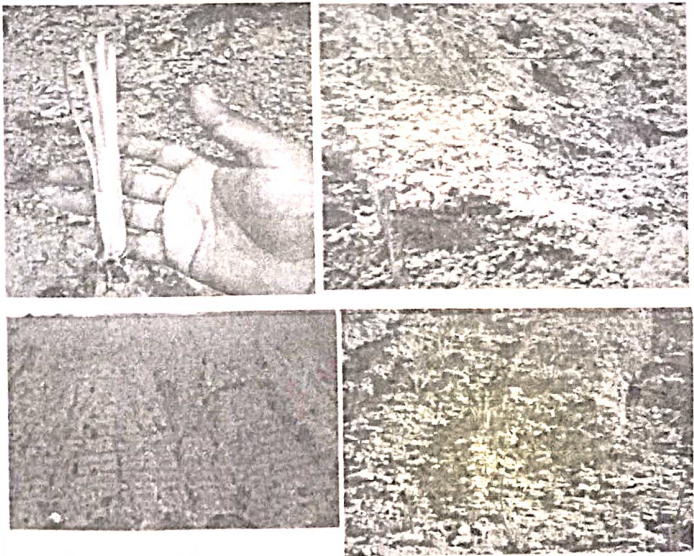
	development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.	The water pumped out from the mine sump is used for dust suppression activities, firefighting, green belt development and other mining allied activities.
(x)	The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.	The Surface runoff is channelized to mine sumps through catch drains and the collected water is used for dust suppression and other mining allied activities and also embankments have been provided in the catch drains to reduce siltation in the mine sumps. Garland drains have been made around the periphery of the mine boundary to prevent the inrush of the storm water. The mining activities are being carried as per the approved mining plan and as per the permission of DGMS or any other authority as prescribed by the law.
(xi)	The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.	A work order (MCL/HQ/Sambalpur/GM (P&P)/18/264-H Dated: 01.07.2018) has been issued to Central Mine Planning and Design Institute Limited (CMPDIL), Ranchi for the study of the carrying capacity of riverine eco-system to assess the impact on the environmental components. After field study, sample collection, and data analysis the final report has been submitted by CMPDI. Based upon the recommendation of the report on the likely impact on the riverine ecosystem and also to improve and maintain the ecological condition, a mitigation plan has been submitted to MoEF&CC Regional Office and SPCB vide letter No. MCL/LA/PO/LKPOCP/Envt.19-20/35 Dated:24.08.2019. The report and mitigation plan for the study have been uploaded to the company's website. http://www.mahanadicoal.in/Environment/env_compliance.php
(d)	Noise and Vibration monitoring and prevention	
(i)	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 equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be	Workers engaged in blasting and drilling operations, operation of HEMM, etc are being provided with personal protective equipment (PPE) like ear plugs. Routine maintenance is also being carried out to reduce vibrations and noise. The Noise level monitoring report for April 2023-September 2023 is attached as Annexure-VII. Safety talks are being conducted at regular intervals for increasing the awareness

	conducted. Progress in usage of such accessories to be monitored.											
(ii)	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.	Controlled blasting techniques with Nonel tube initiation are being adopted, vibration monitoring is also being carried out at regular intervals. Adequate safety measures are being implemented during the blasting period and the blasting operations are being carried out only during the daytime.										
(iii)	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six - monthly basis.	Noise level survey is being carried out at every fortnight at 4 locations during daytime and nighttime. The Noise level monitoring report for April 2023-September 2023 is attached as Annexure-VII. Locations for noise monitoring station is tabulated below <table border="1" data-bbox="726 607 1332 943"> <thead> <tr> <th>Station Name</th> <th>Coordinates</th> </tr> </thead> <tbody> <tr> <td>Near Lilari Nallah Pump house</td> <td>21.777147° N 83.850411° E</td> </tr> <tr> <td>South of Quarry 6</td> <td>21.7370747° N 83.830168° E</td> </tr> <tr> <td>Southwest of Quarry 6</td> <td>21.732742° N 83.791011° E</td> </tr> <tr> <td>Near Quarry 3.</td> <td>21.765694° N 83.813028° E</td> </tr> </tbody> </table> <p>vide letter No. MCL/LKPA/LKPOCP/Env/2022-23/813 dated: 27.05.2023.</p>	Station Name	Coordinates	Near Lilari Nallah Pump house	21.777147° N 83.850411° E	South of Quarry 6	21.7370747° N 83.830168° E	Southwest of Quarry 6	21.732742° N 83.791011° E	Near Quarry 3.	21.765694° N 83.813028° E
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(e)	Mining Plan											
(i)	Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.	The project is strictly adhering to the conditions of the Mines Act, 1952, Coal Mine Regulations, 2017 and other subordinate legislations made there-under as applicable.										
(ii)	Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).	Mining is being carried out as per the approved Mining Plan (including Mine Closure Plan), Lakhanpur OCP Expansion, Phase-II (22.5MTY), Approved by MCL Board vide No. MCL/SBP/CS/BD-248/Exct/2022/12600 dated 22.06.2022. (Annexure-IV). The project is abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).										
(iii)	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.	Forest clearance has been obtained for an area of 233.43 ha vide letter No.8- 280 / 89 – FC Dated: 08/10/1990 and approval for change of land use plan for an area of 84.399 Ha (No.8- 280 / 89 – FC Vol. I Dated: 19/01/2012) and approval for change of land use plan for an area of 25.238 Ha (No.8- 280/ 89 – FC Vol. II Dated: 20/11/2018) has been obtained. No mining activities are being carried out in Forest land where clearance has not been obtained.										
(iv)	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.	The conventional lights are being replaced by LED lights in offices, street lightings & mines (Coal face, OB face, OB dumps, Haul roads, Workshops, etc.). and till date: 20W- 100 Nos., 70W- 367 Nos., 80W- 100 Nos, 120W- 845 Nos. 250W- 420 Nos. 400W- 693 Nos, 700W – 162 Nos., 1000W – 160 Nos. has been installed. Electrical										

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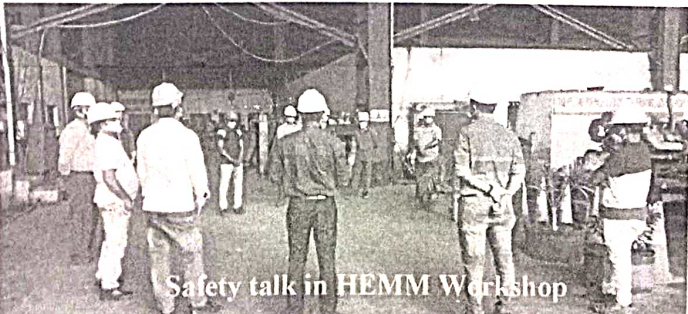
		<p>machinery is being maintained at regular intervals and the power factor for the Lakhanpur Area is maintained at 0.98.</p> <p>Further, A work order for installment and maintenance of Rooftop Solar Panels at different administrative buildings of Lakhanpur Area for a capacity of 1.21 MWp has been issued at a cost of Rs. 4.82 Crores. In which 132.66 KWp at a cost of Rs. 51.45 Lakhs has been already installed at various administrative buildings of Lakhanpur Area and it is in the operation stage.</p>
(f)	Land reclamation	
(i)	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).	Land Restoration/Reclamation Monitoring based on Satellite Data has been carried out in the year 2020 by CMPDIL, Ranchi. The report for Land Restoration / Reclamation Monitoring of Lakhanpur OCP has been enclosed as Annexure –XIV. The previous report was submitted vide letter No. MCL/LKPA/LKPOCP/Envt/2022-23/813 dated: 27.05.2023. Further report is available online http://www.mahanadicoal.in/Environment/satelite_map.php
(ii)	The final mine void depth should preferably be as per 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 to 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 27" August, 2009 and subsequent amendments.	Mining operation is currently in progress and the project will keep the final mine depth to 40m and engineering interventions will be made for aquatic life sustenance. Progressive biological reclamation is being carried out. To date 17.5 ha of external dump plantation, 6.93RKM of avenue plantation, 34.985 ha of block plantation, and 129.7 ha of backfilled area plantation has been carried out. Post mining activities will be carried out as per approved mining closure plan guidelines.
(iii)	The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/”post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.	<p>The excavated area is progressively being backfilled and reclaimed technically and biologically.</p> <p><u>Progressive till September 2023</u></p> <p>Excavated area:977.12ha Decoaled area: 665.21 ha Backfilled area: 651.21 ha Technically reclaimed: 305.37 ha Biologically reclaimed: 187.915 ha</p> <p>The external dumps of an area of 17.5 ha have been completely biologically reclaimed. The progressive compliance is being submitted to RO, MoEF&CC every half-yearly. The previous report</p>

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		<p>was submitted vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.</p> 
(iv)	<p>Fly ash shall be used for external dump of overburden. backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.</p>	<p>The present area of Lakhanpur Opencast Project falls under the area of Integrated Lakhanpur- Belpahar- Lilari Opencast Project. As per the approved mine plan of Integrated Lakhanpur- Belpahar- Lilari Opencast Project the entire area of Lakhanpur OCP will be rehandled and backfilled for extraction of bottom seems. So, fly ash dumping is not possible</p>
(v)	<p>Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site (s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and Plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.</p>	<p>The topsoil which is being excavated is stored in earmarked sites in each quarry. During the year 2023-24 till September 2023, 1013387.27 m³ of topsoil has been excavated and stored. The topsoil is spread over dumps and plantation is carried out. Grass species such as <i>Stylosanthes Hamata</i>, <i>Pennisetum pedicellatum</i>, and <i>Chrysopogon zizanioides</i> are planted in OB slopes and top soil stocks.</p> 

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		The mining and backfilling are being carried out as Mining and Mine closure plan. The plantation is being carried out through State Forest Department; a contract of 3-5 years is given to the department for maintaining the plantation after which the trees become self-sustainable. Native and fruit-bearing species such as Mango (<i>Mangifera indica</i>), Neem (<i>Azadirachta indica</i>), Bael (<i>Aegle marmelos</i>), Ber (<i>Ziziphus mauritiana</i>), Jamun (<i>Syzygium cumini</i>), Bamboo (<i>Bambusa vulgaris</i>), Chatiyani (<i>Alstonia scholaris</i>), Karanja (<i>Millettia pinnata</i>), Radha chuta, Krishna chuta, Sheesham, Mahua, etc. are planted. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Env/2022-23/813 dated: 27.05.2023.
(vi)	The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.	Project affected families are provided with Odisha Rehabilitation and Resettlement policy in which Plot is provided to eligible people. The rehabilitation sites of Lakhanpur OCP, Ganesh Nagar and Jagannath Nagar have land for livestock grazing.
(g)	Green Belt	
(i)	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.	The Environmental Impact Assessment and Environmental Management Plan were prepared by CMPDI, and it was found that no endangered flora/ fauna is found in the mining area of the project. Site-specific wildlife conservation plan for the project has been approved by the Conservator of Forests, Odisha, Bhubaneswar (Memo No. 3056/1WL(C) SSP-299/2011 Dated: 5th May 2011.)
(ii)	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 periphery of the project is surrounded by External OB dumps, Govt. Non-Forest land, Forest land, and Tenancy land. The external OB dumps have been completely biologically reclaimed; the Govt. Non-Forest land and Forest land have been covered with natural vegetation and the land acquisition process for the tenancy land in the periphery of the project area is under process. However, progressive biological reclamation of the project area is being carried out. The details of reclamation are as follows: - External OB dumps: 17.5 Ha Backfilled area: 129.7 Ha Block plantation: 34.985 Ha Avenue Plantation: 6.93 Rkm During the year 2022-23, plantation over an area of 19.8 Ha (31600 saplings) was carried out in nearby villages to the project, and plantation over an area of 2 Ha (5,000 saplings) was carried out over the internally backfilled OB dumps. During the year 2023-24, plantation over an area of 27.7 Ha (42000 saplings) was carried out in nearby villages to the project

		
(h)	Public hearing and Human health issues	
(i)	Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.	Illumination survey is being carried out in workshops and at different places in mines such as OB dump, coal face, coal & OB transportation roads, etc. at regular intervals as per DGMS guidelines. The report for March 2023 is attached as Annexure-VI. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023.
(ii)	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.	Occupational health monitoring for initial and periodical medical examination of the workers engaged in the project is being carried out and records are maintained accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. During 2023-24, Initial Medical Examination was carried out for 235 contractual employees. 156 departmental employees were engaged in Periodical Medical Examination. The workers are being checked for occupational disease, hearing impairment, and others in MCL, Central Hospital, Mandalia, Jharsuguda.
(iii)	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.	Personnel working in dusty areas are provided with dust masks and training is provided for all employees through classroom training and safety talks. During the year 2023-24, 1520 Nos. of dusk masks has been distributed to departmental employees. Safety talks are being held at regular intervals and personnel are insisted to wear dust masks. 



(iv)	Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/ Central Government, as applicable.	Odisha Rehabilitation and Resettlement policy,2006and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 are being followed which include Employment, Cash compensation in place of employment, Plot, Cash compensation in place of plot, Annuity, House building assistance for the eligible persons as per policy. There are about 11 affected villages and 1130 land oustees have been employed. Details of R&R are enclosed as Form-II.
(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 villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.	The project proponent is adhering to the mitigation measures as per the guideline specific under the title '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' OM No. Z-11013/5712014-IA. II (M) dated 29th October 2014. CSR activities, drinking water supply to villages, the separate road for coal transportation, controlled blasting, dust suppression, etc. are being carried out.
(i)	Corporate Environment Responsibility	
(i)	Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.II dated 30th September 2020 and based on commitment made during public consultation process for incorporating in EIA-EMP for deliberation of EAC.	As per the per Ministry's O.M. No. 22-65/2017-IA.II dated 30th September 2020 regarding Fund allocation for Corporate Environment Responsibility (CER) the observations raised during the Public Consultation has been included in the EIA/EMP and also the observations raised are sales being complied. Details enclosed as Annexure-XIII.
(ii)	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.	The company has well down environment policy which states that " <i>Mahanadi Coalfields Limited (MCL) is committed to promoting sustainable development by protecting the environment through integrated project planning & design, prevention/mitigation of pollution, conservation of natural resources, restoration of ecology & biodiversity, recycling/ proper disposal of wastes, addressing climate change and inclusive growth. It also aims to bring awareness amongst its stakeholders for continual improvement in environmental performances following best practices</i> " and has been approved by the Board of Directors. The company also reviews the non-compliance of environmental conditions are regular intervals. The policy is available online at http://www.mahanadicoal.in/Environment/pdf/MCL%20CEP-2018.pdf
(iii)	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior	A separate environmental management cell has been established at the project level with the E-3 grade officer reporting to the Project officer of the E-7 grade and the E-4grade environment officer at the area level. The environment department has been established at the

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	Executive, who will direct to the head of the organization.	Headquarters level directly reporting to the Head of the organization.
(iv)	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	EMP and Environmental conditions are reviewed periodically at the Headquarters level. During the year 2022-23, Rs.456528482 has been spent for environmental protection measures as per environment statement Form-V. The environment-related works are booked in both capital and revenue heads and works are carried out accordingly. The previous report was submitted vide letter No. MCL/LKPA/LKPOCP/Envvt/2022-23/813 dated: 27.05.2023
(v)	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Inter-project Environment audit is being carried out quarterly to review the environmental conditions and rating is given based on that and based on observation from Apex Committee for monitoring compliance EC/FC conditions, a multidisciplinary team from IB valley Area inspected the EC conditions of the project.
(j)	Miscellaneous	
(i)	The project proponent shall make public the environmental clearance granted for the project along with the environmental conditions and safeguards at their cost by prominence 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.	The Advertisement of Environmental Clearance was made in The New Indian Express Newspaper in English and in two local newspapers in Odia Language namely Samaja-Sambalpur and Samaja-Rourkela on 05.10.2023 and attached as annexure-XII. Also the Environmental Clearance has been uploaded on the company's website which can be access through https://www.mahanadicoal.in/Environment/estatutorycp.php
(ii)	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.	A copy of environmental clearance has been forwarded to the Sarpanch of Kudaloi, Lakhanpur, Kusraloi Gram Panchayat, The District Collector Jharsuguda, SPCB Odisha, Tehsildar Lakhanpur, SPCB RO office Jharsuguda, Executive officer-Belpahar Municipal Board, District Industrial Officer Jharsuguda vide letter no. MCL/LKPA/LKPOCP/Envvt./2023-24/2873,2874,2875,2876,2877,2878,2879,2880,2881 respectively dated 03.10.2023.
(iii)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Environmental clearance for 22.5MTY has been uploaded to the company website and also compliance status is also being uploaded to the company website and updated once every six months. (http://www.mahanadicoal.in/Environment/Clearances_compliance.htm).
(iv)	The project proponent shall monitor the criteria pollutants level namely: PM10, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the	Ambient air quality is being monitored for the parameters of SPM, PM10, PM2.5, SO2, and NOx through air quality monitoring stations fixed after consultation and approval from the regional office, Jharsuguda of Odisha State Pollution Control Board (Annexure-I).

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	<p>projects and display the same at a convenient location for disclosure to the public and put on the website of the company.</p>	<p>The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envnt/2022-23/813 dated: 27.05.2023. Air quality monitoring is being carried out through 4 Nos. of stations in both the core zone and buffer zone of the project.</p> <table border="1" data-bbox="724 376 1362 743"> <thead> <tr> <th>Station Name</th> <th>Coordinates</th> </tr> </thead> <tbody> <tr> <td>Near Lilari Nallah Pump house</td> <td>21.777147° N 83.850411° E</td> </tr> <tr> <td>Near Quarry 3.</td> <td>21.765694° N 83.813028° E</td> </tr> <tr> <td>South of Quarry 6</td> <td>21.7370747° N 83.830168° E</td> </tr> <tr> <td>Southwest of Quarry 5</td> <td>21.732742° N 83.791011° E</td> </tr> </tbody> </table> <p>Continuous Ambient Air Quality Monitoring Station has been established near Lakhanpur Tehsil Office and display board has been installed for continuous monitoring and displaying the level air quality parameters.</p>	Station Name	Coordinates	Near Lilari Nallah Pump house	21.777147° N 83.850411° E	Near Quarry 3.	21.765694° N 83.813028° E	South of Quarry 6	21.7370747° N 83.830168° E	Southwest of Quarry 5	21.732742° N 83.791011° E
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(v)	<p>The project proponent shall submit six - monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.</p>	<p>Six months environment clearance compliance report is being submitted timely to the Ministry of Environment, Forest and Climate Change/ Regional Office. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envnt/2022-23/813 dated: 27.05.2023.</p>										
(vi)	<p>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 villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.</p>	<p>The project proponent is adhering to the mitigation measures as per the guideline specific under the title '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' OM No. Z-11013/5712014-IA. II (M) dated 29th October 2014. CSR activities, drinking water supply to villages, the separate road for coal transportation, controlled blasting, dust suppression, etc. are being carried out.</p>										
(vii)	<p>The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.</p>	<p>The environmental statement Form-V for each financial year ending 31st March is being submitted to State Pollution Control Board, for the year 2022-23 was submitted Vide Letter No. एम॰सी॰एल॰/मुख्यालय/पर्यावरण&वन/2023/872 dated 22.09.2023. The previous report was submitted to OSPCB and ERO, MoEF&CC vide letter No. MCL/LKPA/LKPOCP/Envnt/2022-23/813 dated: 27.05.2023. Form-V and Compliance of EC conditions have been uploaded in the company website (http://www.mahanadicoal.in/Environment/Clearances_compliance.htm).</p>										

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(viii)	The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.	The project commenced the mining operations on 28.02.2019 after obtaining Consent To Establish and Consent To Operate and it has been communicated to ERO, MoEF&CC vide letter No. MCL/LKPA/PO/ LKPOCP/Env.18-19/3812 Dated: 28/02/2019. For 22.5 MTPA Capacity, The project has obtained Consent to Establish (No.22282/IND-II-CTE-6771 Dated: 29.11.2022) and Consent to Operate (No. 1874/IND-I-CON-1220 Dated: 09.02.2023)
(ix)	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	All the Rules and Acts Formulated by Odisha State Government and State Pollution Control Board, Odisha are being followed. Necessary permissions and clearances are being obtained timely.
(x)	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	All the commitments and recommendations made in the EIA/EMP report and also during presentation to EAC are being complied. Issues raised in the public hearing are also being implemented. Details are enclosed in Annexure- XIII.
(xi)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.	Agreed
(xii)	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.
(xiii)	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Agreed.
(xiv)	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	Agreed.
(xv)	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.	The project authorities will always extend full cooperation to the officer (s) of the Regional Office. Previous inspection was conducted on 15.06.2023 by IRO, MoEF&CC, and full cooperation was given by furnishing the requisite data/information/monitoring reports.
(xvi)	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)	The project has obtained Consent to Establish (No.22282/IND-II-CTE-6771 Dated: 29.11.2022) and Consent to Operate (No. 1874/IND-I-CON-1220 Dated: 09.02.2023) and Hazardous Waste Authorization (vide no. IND-IV-HW-245/4020 dated 18.03.2023) from State Pollution Control Board, Odisha for 22.5MTY under Air

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	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 and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	(PCP) Act, 1981 and Water (PCP) Act, 1974 and Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and conditions states thereby are being complied. In addition, any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter will be complied.
6.	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.	All the commitments and recommendations made in the EIA/EMP report and also during presentation to EAC are being complied. Issues raised in the public hearing are also being implemented. Details are enclosed in Annexure- XIII.
7.	The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.	The project has obtained Consent to Establish (No.22282/IND-II-CTE-6771 Dated: 29.11.2022) and Consent to Operate (No. 1874/IND-I-CON-1220 Dated: 09.02.2023) has been obtained from Odisha State Pollution Control Board for 22.5MTY under Air (PCP) Act, 1981 and Water (PCP) Act, 1974 before the start of the project and any other further condition stipulated by the ministry or any other competent authority for environmental protection will be complied.
8.	Any appeal against this environmental clearance 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.	No appeal has been made against this environmental clearance.
9.	The coal company/project proponent shall be liable to pay the compensation against the 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.	The project will comply with the orders of the Hon'ble Supreme Court as per the EC condition mentioned.
10.	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.	No illegal mining is happening in Lakhanpur Opencast Project. All the judgements of Hon'ble Supreme Court are being followed.

11.	This Environmental Clearance 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.	All the judgements of Hon'ble Supreme Court are being followed.
12.	All the other terms and conditions of earlier EC dated 02.07.2008 (with Public hearing), 21.05.2014, 28.02.2018 and 07.05.2022 shall remain same.	All the conditions of pervious EC are being considered and being complied.


Project Officer

Lakhanpur Opencast project
Project Officer
Lakhanpur OCP
Lakhanpur Area, MCL

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FORM - I
MINISTRY OF ENVIRONMENT & FORESTS, REGIONAL OFFICE
MONITORING PROFORMA PART-I (DATASHEET)

1	Project type	:	Mining Industry									
2	Name of the Project	:	Lakhanpur Opencast Mine									
3	Clearance letter(s) OM No. & date	:	No. J- 11015/391/2012-IA. II (M) dated 18 th September 2023									
4	a Location District	:	Jharsuguda									
	b State	:	Odisha									
	b Latitude	:	21°47'32"N & 21°43'12"N									
	b Longitude	:	83°47'59"E & 83°51'30"E									
5	a Address of concerned Project Chief Engineer	:	Office of the Project Officer Lakhanpur Open Cast Project Lakhanpur Area PO- UBUDA Via-Belpahar (768217) Dist- JHARSUGUDA (ODISHA) PH-06645-605900 FAX- -06645-233353 Email: po-lkpp.mcl@coalindia.in									
	b Address of Executive Project Engineer/Manager	:	-do-									
6	a Salient features of Project	:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Minaable reserve</td> <td style="width: 40%; text-align: right;">165.74 Mt (as on 01.04.2022)</td> </tr> <tr> <td>Target output</td> <td style="text-align: right;">22.5 MTPA</td> </tr> <tr> <td>Average stripping ratio</td> <td style="text-align: right;">01:2.59</td> </tr> <tr> <td>Project life</td> <td style="text-align: right;">08 Years (as on 01.04.2022)</td> </tr> </table>	Minaable reserve	165.74 Mt (as on 01.04.2022)	Target output	22.5 MTPA	Average stripping ratio	01:2.59	Project life	08 Years (as on 01.04.2022)	
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	b Details of the Environmental Management Plans	:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">a Pre-mining Eenvt. Scenario</td> <td style="width: 60%;"></td> </tr> <tr> <td>b Eenvt. Impact analysis</td> <td></td> </tr> <tr> <td>c Pollution control measures i.e., provision of dust prevention & suppression, arrangement of water pollution control measures, PST, O&GT, SST, Backfilling, Tech, Bio-Reclamation</td> <td></td> </tr> <tr> <td>d Eenvt. Monitoring etc.</td> <td></td> </tr> </table>	a Pre-mining Eenvt. Scenario		b Eenvt. Impact analysis		c Pollution control measures i.e., provision of dust prevention & suppression, arrangement of water pollution control measures, PST, O>, SST, Backfilling, Tech, Bio-Reclamation		d Eenvt. Monitoring etc.		
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d Eenvt. Monitoring etc.												
7	Breakup of the Project area	:										
	a Submergence area (Forest and Non-Forest)	:	No submergence area									
		a	Forest	233.43 ha								
		b	Non-forest	2006.57 ha								
	b Others(Private Land)	:		2240.00 ha								

(Handwritten Signature)

8	Breakup of the Project affected population, with enumeration of those losing houses/dwelling units only, agricultural land only, both dwelling units & agricultural land and less labour/artisans	a	SC	153
		b	ST/ Adivasees	542
		c	Other	553
			Total	1248
9	Financial Details			
a	Project cost as originally planned and subsequently revised estimates and the years of price reference			Rs. 391.33 crores
b	Allocation made for environmental management plans, with item wise & year wise breakup			Rs. 3922 lakhs (As per EMP Ch-IX pg-249)
c	Benefit cost ratio/ Internal rate of return and the year of assessment			
d	Weather 9(c) includes the cost of Environmental Management Plan so far			Yes
e	Expenditure on environmental management			2022-23 ₹456528482
f	Actual expenditure incurred on the Environmental Management plans so far			4565.28 lakhs in 2022-23
10	Forest requirements			
a	The status of approval of diversion of forest land for non-forestry use	233.43 Ha already approved No.8-280/89-FC Dated: Oct 8 th , 1990,		
b	The status of compensatory afforestation.	Money deposited with the State Forest department		
c	The status of tree felling	Tree felling is being done through OFDC Ltd. With permission of the State Forest dept. as per the progress of the project.		
11	Comments on the viability and sustainability of the Compensatory afforestation programme in the light of actual fields experience so far.			Satisfactory.
12	Status of construction			
a	Date of commencement (actual and/or planned)			03.10.1991
b	Date of completion (actual and/or planned)			Year 2029-30 @ 22.5 MTY capacity.
	Present Status of the Project			Running as planned.
13	Reason for the delay if the Project is yet to start.			Not Applicable

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FORM-II
PROFORMA FOR PROVIDING INFORMATION ON REHABILITATION

1	No. of villages affected	: 08 (Eight)		
2	Families affected and displaced	: 1248 nos. Displaced Family and 1129 Shifted		
3	Compensation Package offered per family	: Besides land compensation and employment, two rehabilitation sites have been developed with the provision of drinking water, ponds, wells, community club, puja mandap, roads, drains, school, boundary wall, streetlight, and dispensary.		
4	Budget estimate for Rehabilitation			
a	Total outlay	: 48.09 crores (Cash Compensation in place of Plot, House building allowance, and Incentive)		
b	Amount paid/ used	: 40.42crores		
5	Employment details-			
a	Total employment to be provided	:		
b	Employment given so far	: 1150 nos		
	Name of the village		Employment provided (nos)	
	Khairkuni		268	
	Ubuda		317	
	Tingismal		222	
	Khuntamahul		51	
	Banjipali		29	
	Khaliapali		69	
	Karlajori		8	
	Total		1150	
6	Rehabilitation & Resettlement details		Rehabilitation Site + Cash Compensation	
a	No. of families rehabilitated	: 1129		
	i) Name of site	: Ganesh Nagar Jagannath Nagar		
	ii) Families Rehabilitated	: 1129-Shifted, 271-Shifting against plot, 856- Shifting against Cash Compensation		
	Name of the Village	Nos of families displaced	Benefits Provided	Balance / Not opted
	Khairkuni	267	247	20
	Tingismal	319	313	6
	Banjipali	30	30	0
	Khuntamahul	20	20	0
	Ubuda	391	333	58
	Karlajori	14	7	7
	Khaliapali	100	74	26
	Total	1248	1129	119
b	Family yet to be Rehabilitated			
	i) Name of the site	: 1. Ganesh Nagar 2. Jagannath Nagar 3. Chaurimahul & Grindola Site		
	ii) Nos. of family	: 119 nos		
7	Any other information		: #Tentative figure. Assessment of two more villages is yet to be done.	

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FORM -III
FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT/ PLANTATION UNDER
FC ACT 1980 AND EP ACT 1986

1	a)	Name of the organization	:	Lakhanpur Open Cast Project, 22.5 MTY
	b)	Envt./Forest clearance order Nos	:	No. J- 11015/391/2012-IA. II (M) 18 th September, 2023 No.8-280/89-FC Dated: Oct 8 th , 1990,
2		Location,Block/Sub.Div./Dist/State	:	P.O.- UBUDA, Via-Belpahar Dist.-Jharsuguda, Odisha
3		Address of communication	:	Office of the Project Officer, Lakhanpur Open Cast Project Lakhanpur Area PO- UBUDA Via Belpahar(768217) JHARSUGUDA (ODISHA) PH-06645-605900 FAX- 06645-233353
4		Existing vegetation in the area/region	:	
	a)	Species (Trees/Shrubs/Grasses/Climbers)	:	Bel, Bamboo, Neem, Teak, Amla, Chatiyani, Karanj, Raintree Siris, White Siris, Pijuli, Sissoo, Ambada, Jamun, Patuli.Peltafarm Gulmohar, Kala sirus, Ascacia, Casicia –semia, Sema- ruma, Karanj, Mahaneem, Ber, Kaju etc.
	b)	Major prevalent species of each type	:	Bel, Bamboo, Neem, Teak, Amla, Chatiyani, Karanj, Raintree Siris, White Siris, Pijuli, Sissoo, Ambada, Jamun, Patuli. Peltafarm Gulmohar, Kala sirus, Ascacia, Casicia –semia, Sema- ruma, Karanj, Mahaneem, Ber, Kaju etc.
5		Land coverage by the Project	:	
	a)	The total area under Project	:	2240 ha
	b)	Area covered for basic infrastructure (Roads/Buildings/Factory etc.)	:	212 ha
6		Details about Natural vegetation	:	
	a)	Name & number of tree/species felled	:	From 2011-12 to September 2019, around 15331 trees have been felled over an area of 82.54 ha in Government Non-Forest land and 9997 trees have been felled over an area of 76.34 ha in Forest land.
	b)	Name & number of plant species still available in the area	:	Kendu, Bheru, Jamu, Sal, Dhaura, Kurei, Khajuri, Chara, Kuruda, Sunari, etc are the indigenous species as per EMP
	c)	By protecting the area will indigenous	:	Proper plantation measures must be taken for the indigenous stock to come up.
7		Plantation required to be carried out as per	:	
	a)	Condition of Environment clearance in Nos/ha.	:	2500 Nos./ha
	b)	Condition of Forest (c) Clearance in Nos/ha.	:	not mentioned

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c) Voluntarily in Nos./ha : 2500 Nos./ha

8
a) Details about Plantation
Total area available for plantation in each category: Green Belt/Gap plantation 160.615 ha, External OB Dumps 17.5 ha, Backfilled Area 129.7 ha, Roadsides 6.93 Rkm, Block Plantation 34.985 ha. Urban Plantation: 92.975 Ha

b) Plantation details (category wise & Methodology)

Year of Plantation	Species Planted	Spacing	Height attained	Total area covered	Proposed Plantation
1993-2022	As mentioned above		1m to 1.5m	189.115	Yearly for 3 or 5 years of maintenance
c) Survival % of plantation		: >80%			
d) Total plantation		: 526344			

9 Agency carrying out plantation & maintenance : OFDC & Chhattisgarh Rajya Van Vikas Nigam Ltd, State Forest Department (DFO Jharsuguda).

Financial details (year wise and item wise)

Sl.No.	Year	Expenditure made (in Rs.)	Average cost of each surviving plant in Rs. (Plantation scheme valid for three years)
1	1997-98	585689.6	Rs. 66.78
2	1998-99	959857.7	Rs. 66.79
3	1999-00	1457972	Rs. 66.79
4	2000-01	1038273	Rs. 56.46
5	2001-02	Nil	
6	2002-03	Nil	
7	2003-04	Nil	
8	2004-05	235012	Rs. 27.85
9	2005-06	Nil	
10	2006-07	775115	Rs. 41.69
11	2007-08	2500000	Rs. 39.66
12	2008-09	1071000	49.85
13	2009-10	1046000	50.41
14	2010-11	686390	210.93
16	2012-13	263227 ^s	
17	2013-14	1991622 ^s	
18	2014-15	1611778.00	Rs. 40.29
19	2015-16	A scheme of plantation is made for 3 years for gap plantation and 5 years for block plantation. So, the expenditure for plantation and the average surviving cost of a plant cannot be finalized. Final amount will be declared after the closure of the agreement.	
20	2016-17		
21	2017-18		
22	2018-19		
23	2019-20		
24	2020-21	1122022.05	Rs. 30.97
25	2021-22	14570630	Rs. 251 (Urban Plantation)
26	2022-23	8196399	Rs. 259.37

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10	Inspection of plantation field experts and their comments and follow up action	: Inspected by DFO, Sambalpur & D.M. Chhattisgarh Rajya Van Vikas Nigam Ltd. Survival was found more than 80%
11	Remarks/ any other information	NIL

Date: 29.11.23


Project Officer

Lakhanpur Opencast project
Project Officer
Lakhanpur OCP
Lakhanpur Area, MCL

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ମହାନଦୀ କୋଲଫିଲ୍ଡ୍ସ ଲିମିଟେଡ୍
 महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
 (A subsidiary of coal India Limited)

OFFICE OF THE GENERAL MANAGER,
 LAKHANPUR AREA,
 P.O. - Bandhabahal.
 Dist: Jharsuguda (ORISSA)
 PIN: 768211
 Phone: 06645-233528, FAX:- 06645-233353
 Email: lkparea_mcl@rediffmail.com



Ref: MCL/GM/LKPA/Env/2022-23/ 109

Date: 17.02.2023

To

The Regional Officer,
 State Pollution Control Board,
 COX Colony, Jharsuguda

Sub: Requesting for approval for Routine Environmental Monitoring Stations for the mines of Lakhanpur Area, MCL for the F.Y. 2023-24

Dear Sir,

As per the stipulated conditions in Environmental Clearance, Consent to Establish and Consent to Operate of Mines of Lakhanpur Area, MCL (Lakhanpur OCP, Belpahar OCM and Lilari OCP), the Routine Environmental Monitoring Stations location must be consulted with State Pollution Control Board. In this regard, the location and coordinates for Routine Environmental Monitoring Stations for the year 2023-24 of Lakhanpur Area mines are mentioned below:

Air and Noise Monitoring stations			
Sl.No.	Project	Name of Station	Co-ordinates
1	Lakhanpur Opencast Project	Near Lilari Nallah pump house	21.777147° N 83.850411° E
2	Lakhanpur Opencast Project	South of Quarry 6	21.730747° N 83.830168° E
3	Lakhanpur Opencast Project	South west of Quarry 5	21.732742° N 83.791011° E
4	Lakhanpur Opencast Project	Near Quarry 3	21.765694° N 83.813028° E
5	Belpahar Opencast Mine	Near magazine house	21.746669° N 83.858742° E
6	Belpahar Opencast Mine	Near Central Workshop	21.773982° N 83.872821° E
7	Belpahar Opencast Mine	South of the Mine	21.709160° N 83.846757° E
8	Belpahar Opencast Mine	East of the Mine	21.724506° N 83.867225° E
9	Lilari Opencast Project	Near Lilari Magazine House	21.785989° N 83.854048° E

Heavy metal Monitoring stations			
Sl.No.	Project	Name of Station	Co-ordinates
1	Lakhanpur Opencast Project	South of Quarry 6	21.732742° N 83.791011° E
2	Lakhanpur Opencast Project	Near Lilari Nallah pump house	21.777147° N 83.850411° E
3	Belpahar Opencast Mine	Near magazine house	21.746669° N 83.858742° E
4	Belpahar Opencast Mine	Near Central Workshop	21.773982° N 83.872821° E
5	Lilari Opencast Project	Near Lilari Magazine House	21.785989° N 83.854048° E

Effluent quality Monitoring stations		
Sl.No.	Project	Name of Station
1	Lakhanpur Opencast Project	Effluent Treatment Plant
		Mine sump water
		Mine water Discharge Treatment Plant
2	Belpahar Opencast Mine	Effluent Treatment Plant
		Mine sump water
		Mine water Discharge Treatment Plant
		Sewage Treatment Plant
		ECO Tank
3	Lilari Opencast Project	Mine sump water

Drinking water quality Monitoring stations		
Sl.No.	Project	Name of Station
1	Lakhanpur Opencast Project	Lakhanpur OCP project office
2	Belpahar Opencast Mine	IWSS outlet

Piezometer locations		
Sl.No.	Project	Name of Station
1	Lakhanpur Opencast Project	MIP 09 – State Horticulture office MIP 10 – Daheldera school
2	Belpahar Opencast Mine	MIP 07- DAV school, Bandhbahal MIP 08- Kusaraloi School
3	Lilari Opencast Project	MIP 06 -Lilari PO office

Surface water monitoring locations		
Sl.No.	Project	Name of Station
1.	Lakhanpur Opencast Project and Belpahar Opencast Mine	Pulijore Stream near Tingismal Village (u/s of Lakhanpur OCP)
		Pulijore stream near Darlipali Village before confluence to Lilari nallah (d/s of Lakhanpur OCP)
		Lilari Nallah near Kudaloi village (u/s of Lakhanpur OCP)
		Lilari Nallah near project office at Lilari bridge (d/s of Lakhanpur OCP)
2	Lakhanpur Opencast Project	Karlajori Pond
3	Belpahar Opencast Mine	Adhapada Village

Well water level monitoring locations		
Sl.No.	Project	Name of Station
1	Lakhanpur Opencast Project	Khairkuni Village well Kansar Village well
2.	Belpahar Opencast Mine	Jurabaga Village Well Ubuda Village Well

Submitted for your kind consideration and approval

Yours faithfully,

[Signature]
17/1/23
Project Officer
Lakhanpur OCP

[Signature]
17/1/23
Project Officer
Belpahar OCM

[Signature]
17/01/23
Project Manager
Lilari OCP

Copy to:

1. General Manager, Lakhanpur Area
2. General Manager (Envt), MCL HQ.
3. Area Environment Officer, Lakhanpur Area
4. Nodal Officer (Envt), LKPOCP/BOCM
5. Manager, Lilari OCP
6. Office copy.

[Signature]
01-02-23
Regional Officer
State Pollution Control Board
HARSHUGUDA


[Signature]
GM


AMBIENT AIR QUALITY MONITORING ANNEXURE - II


Date of Sampling	Monitoring Station	SPM	PM10	PM2.5	SO ₂	NO _x
07-APR-2023	Near Quarry 3	194	98	42	15.40	15.44
07-APR-2023	Near Lilari Nallaha Pum House	196	95	44	15.11	11.52
22-APR-2023	Near Lilari Nallaha Pum House	176	86	35	14.36	14.73
22-APR-2023	Near Quarry 3	198	96	45	11.26	12.89
03-APR-2023	Southwest of Quarry 5	151	72	26	15.61	10.96
03-APR-2023	South of Quarry 6	158	78	29	11.41	16.61
04-APR-2023	South of Quarry 6	144	66	24	13.70	14.61
04-APR-2023	Southwest of Quarry 5	146	68	25	11.90	14.55
10-APR-2023	Southwest of Quarry 5	158	77	29	14.84	15.83
10-APR-2023	South of Quarry 6	154	73	27	14.21	13.11
11-APR-2023	South of Quarry 6	135	60	20	15.35	16.29
11-APR-2023	Southwest of Quarry 5	154	74	27	18.75	16.27
17-APR-2023	Southwest of Quarry 5	156	31	28	11.27	20.52
17-APR-2023	South of Quarry 6	146	68	25	16.55	22.27
18-APR-2023	South of Quarry 6	155	74	28	16.38	19.92
18-APR-2023	Southwest of Quarry 5	145	63	25	15.85	12.57
24-APR-2023	Southwest of Quarry 5	138	61	22	13.40	17.83
24-APR-2023	South of Quarry 6	138	62	22	13.15	19.47
25-APR-2023	South of Quarry 6	143	65	24	16.50	25.46
25-APR-2023	Southwest of Quarry 5	162	81	30	12.40	17.36
13-MAY-2023	Near Quarry 3	168	83	34	10.56	18.56
13-MAY-2023	Near Lilari Nallaha Pum House	176	85	36	11.84	12.55
27-MAY-2023	Near Quarry 3	194	91	43	10.47	10.08
27-MAY-2023	Near Lilari Nallaha Pum House	175	83	36	14.82	21.54
02-MAY-2023	Southwest of Quarry 5	153	72	27	12.41	15.65
02-MAY-2023	South of Quarry 6	154	70	27	15.89	20.56
03-MAY-2023	South of Quarry 6	141	62	23	16.87	12.98
03-MAY-2023	Southwest of Quarry 5	164	68	32	18.64	17.78
08-MAY-2023	Southwest of Quarry 5	160	77	30	17.85	10.58
08-MAY-2023	South of Quarry 6	146	66	25	10.56	16.58
09-MAY-2023	South of Quarry 6	150	68	26	14.65	18.58
09-MAY-2023	Southwest of Quarry 5	158	60	29	12.56	18.57
16-MAY-2023	Southwest of Quarry 5	143	63	24	14.39	17.28
16-MAY-2023	South of Quarry 6	155	74	28	10.99	14.25
17-MAY-2023	South of Quarry 6	149	69	26	13.45	11.52
17-MAY-2023	Southwest of Quarry 5	109	81	34	16.87	16.20
22-MAY-2023	Southwest of Quarry 5	152	70	27	18.38	17.32
22-MAY-2023	South of Quarry 6	158	77	29	14.92	15.78
23-MAY-2023	South of Quarry 6	165	80	32	15.85	14.25

23-MAY-2023	Southwest of Quarry 5	161	70	30	11.58	15.41
07-JUNE-2023	Near Quarry 3	206	97	48	14.85	19.28
07-JUNE-2023	Near Lilari Nallaha Pum House	182	90	39	12.26	18.68
17-JUNE-2023	Near Quarry 3	196	93	44	19.24	15.92
17-JUNE-2023	Near Lilari Nallaha Pum House	166	81	33	13.69	12.96
05-JUNE-2023	Southwest of Quarry 5	137	59	21	17.62	16.23
05-JUNE-2023	South of Quarry 6	144	62	24	15.61	15.37
06-JUNE-2023	South of Quarry 6	158	76	29	15.57	17.1
06-JUNE-2023	Southwest of Quarry 5	139	61	23	17.46	13.95
14-JUNE-2023	Southwest of Quarry 5	167	84	33	18.97	14.17
14-JUNE-2023	South of Quarry 6	146	65	25	16.99	19.67
15-JUNE-2023	South of Quarry 6	156	73	28	13.70	19.01
15-JUNE-2023	Southwest of Quarry 5	135	59	21	11.84	17.14
21-JUNE-2023	Southwest of Quarry 5	152	70	27	16.20	17.58
21-JUNE-2023	South of Quarry 6	153	71	27	17.62	21.11
22-JUNE-2023	South of Quarry 6	138	60	22	19.32	17.71
22-JUNE-2023	Southwest of Quarry 5	163	80	31	17.64	20.25
27-JUNE-2023	Southwest of Quarry 5	146	66	25	14.50	18.99
27-JUNE-2023	South of Quarry 6	155	73	28	15.62	17.90
28-JUNE-2023	South of Quarry 6	169	62	33	21.31	18.91
28-JUNE-2023	Southwest of Quarry 5	149	68	26	12.39	18.99
08-JULY-2023	Near Quarry 3	176	86	37	19.67	16.41
08-JULY-2023	Near Lilari Nallaha Pum House	180	87	38	12.02	12.02
21-JULY-2023	Near Lilari Nallaha Pum House	172	86	35	17.12	17.12
28-JULY-2023	Near Quarry 3	191	64	42	12.53	12.53
03-JULY-2023	Southwest of Quarry 5	153	71	27	11.96	11.97
03-JULY-2023	South of Quarry 6	158	78	29	10.42	23.48
04-JULY-2023	South of Quarry 6	148	69	26	23.03	18.20
04-JULY-2023	Southwest of Quarry 5	164	83	32	15.21	16.32
10-JULY-2023	Southwest of Quarry 5	145	66	25	13.78	15.77
10-JULY-2023	South of Quarry 6	162	79	30	20.37	17.48
11-JULY-2023	South of Quarry 6	143	63	24	10.39	17.43
11-JULY-2023	Southwest of Quarry 5	156	73	28	20.18	15.56
17-JULY-2023	Southwest of Quarry 5	145	67	25	15.09	16.43
17-JULY-2023	South of Quarry 6	137	58	21	14.50	15.31
18-JULY-2023	South of Quarry 6	157	77	29	14.50	10.47
18-JULY-2023	Southwest of Quarry 5	141	61	23	14.79	15.22
24-JULY-2023	Southwest of Quarry 5	158	77	29	12.18	13.27
24-JULY-2023	South of Quarry 6	143	62	24	12.77	13.57
25-JULY-2023	South of Quarry 6	166	84	33	19.40	17.01
25-JULY-2023	Southwest of Quarry 5	144	62	24	18.68	17.27

09-AUG-2023	Near Quarry 3	176	83	36	11.47	16.82
09-AUG-2023	Near Lilari Nallaha Pum House	184	88	39	21.73	10.31
21-AUG-2023	Near Quarry 3	171	86	35	13.54	16.54
21-AUG-2023	Near Lilari Nallaha Pum House	183	92	39	11.35	14.58
01-AUG-2023	Southwest of Quarry 5	144	63	24	10.25	13.68
01-AUG-2023	South of Quarry 6	146	65	25	11.07	24.46
02-AUG-2023	South of Quarry 6	155	74	28	12.73	20.03
02-AUG-2023	Southwest of Quarry 5	150	69	26	13.58	10.60
07-AUG-2023	Southwest of Quarry 5	157	77	29	16.88	19.23
07-AUG-2023	South of Quarry 6	168	83	34	18.37	19.71
08-AUG-2023	South of Quarry 6	153	70	27	21.38	20.18
08-AUG-2023	Southwest of Quarry 5	164	81	32	20.18	14.74
16-AUG-2023	Southwest of Quarry 5	143	65	24	16.00	14.52
16-AUG-2023	South of Quarry 6	203	96	45	10.52	17.58
17-AUG-2023	South of Quarry 6	145	68	25	16.58	16.58
17-AUG-2023	Southwest of Quarry 5	140	64	23	11.58	14.58
23-AUG-2023	Southwest of Quarry 5	155	74	28	14.75	20.25
23-AUG-2023	South of Quarry 6	154	31	28	13.56	12.56
24-AUG-2023	South of Quarry 6	147	63	25	14.98	16.58
24-AUG-2023	Southwest of Quarry 5	137	62	22	13.89	17.84
07-SEPT-2023	Near Quarry 3	188	91	42	14.70	20.12
07-SEPT-2023	Near Lilari Nallaha Pum House	179	87	38	14.30	14.37
23-SEPT-2023	Near Quarry 3	176	86	37	11.57	15.09
23-SEPT-2023	Near Lilari Nallaha Pum House	180	87	38	11.37	10.40
01-SEPT-2023	Southwest of Quarry 5	157	76	27	16.77	17.10
01-SEPT-2023	South of Quarry 6	156	74	28	20.18	18.98
02-SEPT-2023	South of Quarry 6	143	62	23	19.74	15.06
02-SEPT-2023	Southwest of Quarry 5	144	63	24	13.77	19.60
08-SEPT-2023	Southwest of Quarry 5	148	69	26	17.51	23.31
08-SEPT-2023	South of Quarry 6	146	65	25	19.07	14.09
09-SEPT-2023	South of Quarry 6	157	77	29	16.69	12.76
09-SEPT-2023	Southwest of Quarry 5	162	80	30	12.12	21.33
18-SEPT-2023	Southwest of Quarry 5	152	71	27	23.35	15.25
18-SEPT-2023	South of Quarry 6	157	78	29	20.00	15.98
19-SEPT-2023	South of Quarry 6	148	69	26	24.74	17.86
19-SEPT-2023	Southwest of Quarry 5	164	83	32	12.63	21.91
25-SEPT-2023	Southwest of Quarry 5	145	66	25	24.80	24.14
25-SEPT-2023	South of Quarry 6	160	79	30	14.09	21.77
26-SEPT-2023	South of Quarry 6	157	73	28	22.77	19.23
26-SEPT-2023	Southwest of Quarry 5	143	63	24	24.78	14.50

 cmpdi <i>A Mini Ratna Company</i>		AMBIENT AIR QUALITY DATA (NAAQS PARAMETER) Area: Lakhanpur				
Project	Lakhanpur OCP					
Monitoring Station	South of Quarry 6					
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)
03-Apr-2023	<20.0	5.69	<0.1	<1.0	<1.0	0.3
04-Apr-2023	<20.0	5.71	<0.1	<1.0	<1.0	0.2
10-Apr-2023	<20.0	5.43	<0.1	<1.0	<1.0	0.1
11-Apr-2023	<20.0	6.88	<0.1	<1.0	<1.0	0.2
17-Apr-2023	<20.0	5.61	<0.1	<1.0	<1.0	0.2
18-Apr-2023	<20.0	5.73	<0.1	<1.0	<1.0	0.1
24-Apr-2023	<20.0	6.80	<0.1	<1.0	<1.0	0.3
25-Apr-2023	<20.0	7.31	<0.1	<1.0	<1.0	.3
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)	04(1hours)


 Authorised Signatory
 CMPDI, RI-VII, LAB
 BHUBANESWAR


 O. I. C.
 Env. Lab
 CMPDI, RI-VII
 Bhubaneswar



cmpdi


A Mini Ratna Company

AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP					
Monitoring Station	South West of Quarry 5					
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)
03-Apr-2023	<20.0	6.89	<0.1	<1.0	<1.0	0.2
04-Apr-2023	<20.0	4.93	<0.1	<1.0	<1.0	0.3
10-Apr-2023	<20.0	4.14	<0.1	<1.0	<1.0	0.1
11-Apr-2023	<20.0	5.18	<0.1	<1.0	<1.0	0.2
17-Apr-2023	<20.0	5.63	<0.1	<1.0	<1.0	0.3
18-Apr-2023	<20.0	4.15	<0.1	<1.0	<1.0	0.1
24-Apr-2023	<20.0	7.15	<0.1	<1.0	<1.0	0.1
25-Apr-2023	<20.0	4.82	<0.1	<1.0	<1.0	0.2
Standard	400(24hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)	04(1hours)


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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP					
Monitoring Station	South of Quarry 6					
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)
23-May-23	<20.0	6.12	<0.1	<1.0	<1.0	0.3
22-May-23	<20.0	5.42	<0.1	<1.0	<1.0	0.4
17-May-23	<20.0	6.14	<0.1	<1.0	<1.0	0.2
16-May-23	<20.0	5.78	<0.1	<1.0	<1.0	0.1
09-May-23	<20.0	4.32	<0.1	<1.0	<1.0	0.1
08-May-23	<20.0	6.31	<0.1	<1.0	<1.0	0.3
03-May-23	<20.0	4.32	<0.1	<1.0	<1.0	0.2
02-May-23	<20.0	7.05	<0.1	<1.0	<1.0	0.3
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	04 (1hours)

Project	Lakhanpur OCP					
Monitoring Station	South West of Quarry 5					
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)
23-May-23	<20.0	4.52	<0.1	<1.0	<1.0	0.1
22-May-23	<20.0	4.78	<0.1	<1.0	<1.0	0.2
17-May-23	<20.0	4.32	<0.1	<1.0	<1.0	0.3
16-May-23	<20.0	7.39	<0.1	<1.0	<1.0	0.2
09-May-23	<20.0	4.32	<0.1	<1.0	<1.0	0.1
08-May-23	<20.0	6.65	<0.1	<1.0	<1.0	0.2
03-May-23	<20.0	6.31	<0.1	<1.0	<1.0	0.2
02-May-23	<20.0	5.21	<0.1	<1.0	<1.0	0.3
Standard	400 (24hours)	180 (hour)	1.0 (24hours)	6.0 (Annual)	20 (Annual)	04 (1hours)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP							
Monitoring Station	South West of Quarry 5							
Date of sampling	Ammonia (NH₃)	Ozone (O₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
05-June-2023	<20.0	6.12	<0.1	<1.0	<1.0	0.62	BQL(QL=0.5)	BQL(QL=2.5)
06-June-2023	<20.0	8.11	<0.1	<1.0	<1.0	0.44	BQL(QL=0.5)	BQL(QL=2.5)
14-June-2023	<20.0	7.80	<0.1	<1.0	<1.0	0.53	BQL(QL=0.5)	BQL(QL=2.5)
15-June-2023	<20.0	7.12	<0.1	<1.0	<1.0	0.41	BQL(QL=0.5)	BQL(QL=2.5)
21-June-2023	<20.0	6.41	<0.1	<1.0	<1.0	0.46	BQL(QL=0.5)	BQL(QL=2.5)
22-June-2023	<20.0	6.55	<0.1	<1.0	<1.0	0.64	BQL(QL=0.5)	BQL(QL=2.5)
27-June-2023	<20.0	6.62	<0.1	<1.0	<1.0	0.39	BQL(QL=0.5)	BQL(QL=2.5)
28-June-2023	<20.0	7.88	<0.1	<1.0	<1.0	0.09	BQL(QL=0.5)	BQL(QL=2.5)
Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	04(1 hours)	01(annual)	05(annual)

Jasvati



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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP							
Monitoring Station	South of Quarry 6							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(ng/m^3)	(ng/m^3)	(mg/m^3)	(ng/m^3)	($\mu\text{g}/\text{m}^3$)
05-June-2023	<20.0	5.12	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.5)	BQL(Q L=2.5)
06-June-2023	<20.0	6.23	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.5)	BQL(Q L=2.5)
14-June-2023	<20.0	4.84	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.5)	BQL(Q L=2.5)
15-June-2023	<20.0	5.12	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.5)	BQL(Q L=2.5)
21-June-2023	<20.0	6.15	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.5)	BQL(Q L=2.5)
22-June-2023	<20.0	7.15	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.5)	BQL(Q L=2.5)
27-June-2023	<20.0	6.23	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.5)	BQL(Q L=2.5)
28-June-2023	<20.0	6.14	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.5)	BQL(Q L=2.5)
Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	04(1 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project		Lakhanpur OCP						
Monitoring Station		South West of Quarry 5						
Date of sampling	Ammonia (NH₃)	Ozone (O₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
03-July-2023	<20.0	6.31	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BDL
04-July-2023	<20.0	7.56	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BDL
10-July-2023	<20.0	6.38	<0.1	<1.0	<1.0	0.5	BQL(QL=0.7)	BDL
11-July-2023	<20.0	7.64	<0.1	<1.0	<1.0	0.1	BQL(QL=0.7)	BDL
17-July-2023	<20.0	8.04	<0.1	<1.0	<1.0	0.6	BQL(QL=0.7)	BDL
18-July-2023	<20.0	5.55	<0.1	<1.0	<1.0	0.4	BQL(QL=0.7)	BDL
24-July-2023	<20.0	7.24	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BDL
25-July-2023	<20.0	6.47	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BDL
29-July-2023	<20.0	6.47	<0.1	<1.0	<1.0	0.7	BQL(QL=0.7)	BDL
31-July-2023	<20.0	6.13	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BDL
Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	04(1 hours)	01(annual)	05(annual)

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**cmpdi***A Mini Ratna Company***AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)****Area: Lakhanpur**

Project	Lakhanpur OCP							
Monitoring Station	South of Quarry 6							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
03-July-2023	<20.0	5.45	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
04-July-2023	<20.0	4.36	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.7)	BDL
10-July-2023	<20.0	4.87	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.7)	BDL
11-July-2023	<20.0	7.44	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
17-July-2023	<20.0	6.34	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
18-July-2023	<20.0	5.21	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
24-July-2023	<20.0	4.05	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
25-July-2023	<20.0	6.30	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
29-July-2023	<20.0	5.33	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.7)	BDL
31-July-2023	<20.0	6.21	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.7)	BDL
Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	04(1h ours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP							
Monitoring Station	South of Quarry 6							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
01-Aug-2023	<20.0	5.45	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.7)	BDL
02-Aug-2023	<20.0	4.80	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.7)	BDL
07-Aug-2023	<20.0	6.34	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
08-Aug-2023	<20.0	5.22	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
16-Aug-2023	<20.0	6.37	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BDL
17-Aug-2023	<20.0	5.89	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.7)	BDL
23-Aug-2023	<20.0	5.47	<0.1	<1.0	<1.0	0.4	BQL(Q L=0.7)	BDL
24-Aug-2023	<20.0	6.31	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.7)	BDL
Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	04(1 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP							
Monitoring Station	South West of Quarry 5							
Date of sampling	Ammونيا (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzen e
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
01-Aug-2023	<20.0	5.21	<0.1	<1.0	<1.0	0.3	BQL(QL =0.7)	BDL
02-Aug-2023	<20.0	4.32	<0.1	<1.0	<1.0	0.3	BQL(QL =0.7)	BDL
07-Aug-2023	<20.0	4.63	<0.1	<1.0	<1.0	0.4	BQL(QL =0.7)	BDL
08-Aug-2023	<20.0	4.58	<0.1	<1.0	<1.0	0.4	BQL(QL =0.7)	BDL
16-Aug-2023	<20.0	6.34	<0.1	<1.0	<1.0	0.5	BQL(QL =0.7)	BDL
17-Aug-2023	<20.0	5.43	<0.1	<1.0	<1.0	0.5	BQL(QL =0.7)	BDL
23-Aug-2023	<20.0	4.27	<0.1	<1.0	<1.0	0.3	BQL(QL =0.7)	BDL
24-Aug-2023	<20.0	4.96	<0.1	<1.0	<1.0	0.3	BQL(QL =0.7)	BDL
Standard	400(24 hours)	180(hour)	1.0(24 hours)	6.0(Annual)	20(Annual)	04(1 hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP							
Monitoring Station	South West of Quarry 5							
Date of sampling	Ammonia (NH₃)	Ozone (O₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (α) Pyrene	Benzene
	(μg/m³)	(μg/m³)	(μg/m³)	(ng/m³)	(ng/m³)	(mg/m³)	(ng/m³)	(μg/m³)
01-Sep-2023	<20.0	5.45	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
02-Sep-2023	<20.0	4.36	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
08-Sep-2023	<20.0	5.98	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
09-Sep-2023	<20.0	7.24	<0.1	<1.0	<1.0	0.1	BQL(QL=0.7)	BQL
18-Sep-2023	<20.0	5.36	<0.1	<1.0	<1.0	0.1	BQL(QL=0.7)	BQL
19-Sep-2023	<20.0	5.25	<0.1	<1.0	<1.0	0.1	BQL(QL=0.7)	BQL
25-Sep-2023	<20.0	4.63	<0.1	<1.0	<1.0	0.2	BQL(QL=0.7)	BQL
26-Sep-2023	<20.0	5.97	<0.1	<1.0	<1.0	0.3	BQL(QL=0.7)	BQL
Standard	400(24 hours)	180(hour)	1.0(24hours)	6.0(Annual)	20(Annual)	04(1hours)	01(annual)	05(annual)

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AMBIENT AIR QUALITY DATA (NAAQS PARAMETER)

Area: Lakhanpur

Project	Lakhanpur OCP							
Monitoring Station	South of Quarry 6							
Date of sampling	Ammonia (NH ₃)	Ozone (O ₃)	Lead (Pb)	Arsenic (As)	Nickel (Ni)	CO	Benzo (a) Pyrene	Benzene
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(ng/m ³)	(ng/m ³)	(mg/m ³)	(ng/m ³)	(µg/m ³)
01-Sep-2023	<20.0	4.56	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BQL
02-Sep-2023	<20.0	5.20	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.7)	BQL
08-Sep-2023	<20.0	4.63	<0.1	<1.0	<1.0	0.3	BQL(Q L=0.7)	BQL
09-Sep-2023	<20.0	4.69	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BQL
18-Sep-2023	<20.0	5.87	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BQL
19-Sep-2023	<20.0	7.21	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BQL
25-Sep-2023	<20.0	5.39	<0.1	<1.0	<1.0	0.1	BQL(Q L=0.7)	BQL
26-Sep-2023	<20.0	6.45	<0.1	<1.0	<1.0	0.2	BQL(Q L=0.7)	BQL
Standard	400(24 hours)	180(h our)	1.0(24 hours)	6.0(An nual)	20(An nual)	04(1h ours)	01(ann ual)	05(annu al)

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महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

Office of the Company Secretary
At/Po. Jagruti Vihar, Burla, MCL
Dist. Sambalpur – 768020 (Odisha)
CIN: U10102OR1992GOI003038
TeleFax No. 06632542977
Email id: cosecymcl@gmail.com
Website: www.mahanadicoal.in



MCL

Ref. No. MCL/SBP/CS/BD-248/Exct/2022/ 12600

Date: 20.06.2022

गोपनीय/CONFIDENTIAL

To
The GM(P&P)
MCL HQs

Sub: Extract from the minutes of the 248th Board meeting of MCL held at 04.00 PM on Monday, the 23rd May, 2022 at the Registered Office of the Company, Jagruti Vihar, Burla, Sambalpur, Odisha-768020.

प्रिय महोदय,

आप के सूचनार्थ एवं उचित कार्यवाही हेतु एम.सी.एल. निदेशक मण्डल की 248 वी बैठक का उद्धृत दिया जा रहा है।

248.C/4 Approval for Mining Plan and Mine Closure Plan for Kulda Expansion OCP (21 MTY) (Revision-3) with a total closure cost of Rs.3582.63 lakhs compounded @ 5% annually over a period of 3 years.

4.1 The Board deliberated on the proposal in detail and based on the clarifications offered by GM(P&P) approved the proposal for Mining Plan and Mine Closure Plan for Kulda Expansion OCP (21 MTY) (Revision-3) with a total closure cost of Rs.3582.63 lakhs compounded @ 5% annually over a period of 03 years as per the details brought out in the agenda note.

248.C/5 Approval of Mining Plan and Mine Closure Plan for Lakhanpur OC Expansion (Phase-II) (22.5 MTY) (Revision-2) with a total closure cost of Rs.19633.17 lakhs over a period of 08 years compounded @ 5% annually.

5.1 The Board deliberated on the proposal in detail and based on the clarifications offered by GM(P&P) approved the proposal for Mining Plan and Mine Closure Plan for Lakhanpur OC Expansion (Phase-II) (22.5 MTY) (Revision-2) with a total closure cost of Rs.19633.17 lakhs over a period of 08 years compounded @ 5% annually as per the details brought out in the agenda note.

भवदीय,

कंपनी सचिव

Effluent treatment plant at Lakhanpur OCP



Aeration tank and Oil skimmer



Control panel and Pump



Sludge drying bed



Multimedia filter



Sedimentation tanks



Compressor for Aeration

Sewage treatment plant at BTI colony



Aeration tank



Clarifier tank



Flow chart



Multimedia filter



Aerators



Feed tank

ANNEXURE – VI

ILLUMINATION SURVEY

(September 2023)

S.No	Date of Survey	Place of Survey	Standard Value as per DGMS circular		Measured value in Lux	
			Horizontal	Vertical	Horizontal	Vertical
1.	30.09.2023	Quarry No.6 OB Face (DG Set)	15	25	298	365
			15	25	191	303
		Quarry No.1 Coal Face	15	25	31	42
			15	25	24	34
		Quarry No.1 OB Face	15	25	21	28
			15	25	18	22
2.	30.09.2023	Quarry No.4 Coal face (DG Set)	15	15	250	339
			15	15	185	276
			15	15	89	149
3.	30.09.2023	Quarry No.5 Coal face	15	25	31	26
			15	25	22	25
			15	25	17	16
			15	25	11	13
4.	30.09.2023	Quarry No.6 Coal face (DG Set)	15	25	298	365
			15	25	191	303
			15	25	78	122
			15	25	54	75
7.	30.09.2023	Q5 Junction towardsoutgate	10	-	33	--
			10	-	28	-
			10	-	21	-
8.	30.09.2023	Q3 Jn. to Q1 coal face CT road	10	-	40	-
			10	-	35	-
			10	-	28	-
10	30.09.2023	Q6 haul road	10	-	20	-
			10	-	18	-
			10	-	12	-
			10	-	36	-
11.	30.09.2023	Q3 pumping Station.	40	-	69	-
			40	-	59	-

12	30.09.2023	Substation Yard	100	50	153	146
			100	50	129	117
			100	50	118	76
13.	30.09.2023	Q.NO 6 Junction	10	-	13	-
			10	-	11	-
			10	-	9	-
14.	30.09.2023	E&M workshop Dumper section	100	50	129	146
			100	50	115	117
			100	50	102	76

Annexure- VII
Noise Monitoring Survey

STATION	DATE OF SAMPLING	DAY	NIGHT
Near Quarry 3	06-APR-2023	64.9	62.1
South of Quarry 6	06-APR-2023	63.7	58.8
Near Lilari Nallah Pump House	06-APR-2023	65.3	63.6
South West of Quarry 5	06-APR-2023	65.9	60.2
South West of Quarry 5	20-APR-2023	66.7	61.9
Near Lilari Nallah Pump House	20-APR-2023	64.1	61.8
South of Quarry 3	20-APR-2023	62.6	60.4
South of Quarry 6	20-APR-2023	64.3	62.8
South West of Quarry 5	10-MAY-2023	62.9	59.4
Near Lilari Nallah Pump House	10-MAY-2023	62.4	57.8
Near Quarry 3	10-MAY-2023	63.6	59.4
South of Quarry 6	10-MAY-2023	64.3	57.2
South West of Quarry 5	18-MAY-2023	64.7	59.3
South of Quarry 6	18-MAY-2023	63.4	60.6
Near Lilari Nallah Pump House	18-MAY-2023	64.3	62.1
Near Quarry 3	18-MAY-2023	65.9	63.7
South of Quarry 6	13-JUN-2023	64.3	62.7
Near Quarry 3	13-JUN-2023	67.4	63.5
South West of Quarry 5	13-JUN-2023	66.9	64.6
Near Lilari Nallah Pump House	13-JUN-2023	66.8	64.8
Near Lilari Nallah Pump House	29-JUN-2023	68.2	65.7
South of Quarry 6	29-JUN-2023	63.7	58.8
South West of Quarry 5	29-JUN-2023	64.9	60.1
Near Quarry 3	29-JUN-2023	65.4	62.1
Near Quarry 3	13-JUL-2023	62.4	58.2
South West of Quarry 5	13-JUL-2023	54.0	44.2
Near Lilari Nallah Pump House	13-JUL-2023	64.6	62.3
South of Quarry 6	13-JUL-2023	53.8	43.2
South West of Quarry 5	27-JUL-2023	47.9	44.7
South of Quarry 6	27-JUL-2023	55.0	43.2
Near Lilari Nallah Pump House	27-JUL-2023	69.4	66.4
Near Quarry 3	27-JUL-2023	63.2	61.3
South West of Quarry 5	11-AUG-2023	53.3	41.7
South of Quarry 6	11-AUG-2023	52.4	43.9
Near Quarry 3	11-AUG-2023	60.6	59.3
Near Lilari Nallah Pump House	11-AUG-2023	62.3	57.8
Near Lilari Nallah Pump House	11-AUG-2023	62.3	58.2
South of Quarry 6	11-AUG-2023	44.2	38.4
South West of Quarry 5	11-AUG-2023	42.6	39.3
Near Quarry 3	11-AUG-2023	63.6	57.6
Near Lilari Nallah Pump House	12-SEPT-2023	66.5	64.1
Near Quarry 3	12-SEPT-2023	67.6	65.4
South West of Quarry 5	12-SEPT-2023	51.3	42.6
South of Quarry 6	12-SEPT-2023	49.7	41.6
Near Lilari Nallah Pump House	21-SEPT-2023	65.2	62.8
Near Quarry 3	21-SEPT-2023	67.6	65.1
South West of Quarry 5	21-SEPT-2023	54.2	40.7
South of Quarry 6	21-SEPT-2023	48.9	43.4

Tentative action for CSR activities in Lakhanpur Area for the year 2023-24 (Annexure –VIII)		
S. No.	Work description	Value (Approx.)
1	Construction of Guard wall at Mauliberna Basti, Lakhanpur GP.	40.00
2	Construction of Fabricated G.I. Sheet Shed at Junian Sahara Pada, Lakhanpur GP.	25.00
3	Construction of Fabricated G.I. Sheet Shed in front of Jagannath Mandir at Lakhanpur village, Lakhanpur GP.	54.26
4	Construction of Drain with Slab at Lakhanpur Basti, Lakhanpur GP.	80.66
5	Construction of New Bus Stand at Jagannath Chowk, Lakhanpur village, Lakhanpur GP.	31.92
6	Construction of a R.O water filtration center with freezer (Amruta Dhara) for drinking purpose at Beheraguda Chowk, Lakhanpur GP.	70.00
7	One permanent stage with a community center (green rooms) at Maa Samalai Mahotsav Ground, Lakhanpur GP.	16.09
8	Construction of guard wall with bathing steps at Bagdiya nala near Jugal Kalo house, Beheraguda, Lakhanpur GP.	42.17
9	Completion of concrete road from PMGSY road to colony pada, Lakhanpur GP.	75.00
10	Construction of guard wall at Bagdiya nala near Lakhapati Biswal house, Mauliberna, Lakhanpur GP.	45.00
11	Construction of bathing steps at Bagdiya nala, Beheraguda, Lakhanpur GP.	18.00
12	Construction of concrete road at Kumurapada from Goura Naik house to the end of village Bandipahar, Lakhanpur GP.	85.00
13	Electrification with 10 (Ten) nos. of solar lights for Ashok Chakra Club, Lakhanpur.	8.00
14	Construction of dug-well and supply of water to Bhejikud Talpada with solar system, Pipilikani GP.	15.00
15	Digging of deep bore well and supply of water to village Bhejikud upar pada, Bhejikud PUPS and Sabarpada two nos. with solar system, Pipilikani GP.	25.00
16	Digging of deep bore well and supply of water to village Padapali with solar system, Pipilikani GP.	15.00
17	Excavation of Sarandamal-Talibahal Kanta including stone patching, construction of 6 nos. of bathing ghats, sitting arrangement for elderly people and jogging track across the Kanta.	70.00
18	Repairing and constructing the black topping road at Kirarama village, Sarandamal GP.	95.00
19	Renovation of pond near 'Siba Mandir' at Kirarama village, Sarandamal GP.	57.35
20	Construction of a Cultural Facility Centre at Kirarama for protecting, practicing & promoting indigenous art & culture.	30.00
21	Improvement of road from Sarat Padhan house to old Bhejikud via Padapali Bandha, Pipilikani GP.	50.00
22	Following works at the Govt. U.P. School, Kirarama -	95.00
	☑ Construction of five classrooms by dismantling/demolishing existing damaged classrooms in old school building.	
	☑ Construction of Kitchen in the existing school building.	
	☑ Installation/construction of outdoor playground equipments for student.	
	☑ Hand wash basin with multi-tap for students and teachers.	
	☑ One toilet for girls and one toilet for boys.	
	☑ Development of garden along with pavers block all around the school.	
☑ Construction and installation of school gate.		
23	Supply and instillation of a RO water filter, one computer set, one printer and six ceiling fans at Govt. U.P. School, Kirarama.	1.00
24	Supply of two almirah, five tables and twenty chairs at Govt. U.P. School, Kirarama.	0.50
25	Renovation of Kainsbahal Upar Muda (pond) with 2 nos. of Bathing Steps & changing room, Dalgaon GP.	30.00
26	Renovation of Basupali Upar Muda (pond) with 2 nos. of Bathing Steps & changing room, Dalgaon GP.	30.00
27	Construction of a community centre at Negipali Muslim pada, Dalgaon GP.	40.00
28	Construction of CC road at Cherkanta Raudia pada, Dalgaon GP.	50.00
29	Completion of CC road at Khapsimuda, Dalgaon GP.	50.00
30	Renovation of pond with sludge cleaning and construction of four nos. bathing ghats at Jurabaga Kanta.	40.00
31	Renovation of Tali bandha and construction of four nos. bathing ghats at Jurabaga.	40.00
32	Construction of BM road from Muchhabahal Chowkh to Luhurapada road at Jurabaga. (2 km approx.)	60.00
33	Cleaning, Renovation and bolder pitching of Bada Kanta, Gumadera, Belpahar.	60.00
34	Cleaning, Renovation and bolder pitching of Samada Kanta, Belpahar.	50.00
35	Construction of class room at Govt. School, Jamkani, Belpahar.	20.00

36	Construction of dining shed at Samada Primary School, Belpahar.	5.00
37	Construction of Community Toilet at Udajahajpada, Gumadera, Belpahar.	10.00
38	Construction of Community Toilet at Jhandapada, Gumadera, Belpahar.	10.00
39	Construction of Community Toilet at Gwalapada, W.No.8, Belpahar.	10.00
40	Construction of Community Toilet at Gwalapada, W.No.13, Belpahar.	10.00
41	Construction of Community Toilet at Mahijore, Belpahar.	10.00
42	Construction of Community Toilet at Mahijore Uparpada (Turipada), Belpahar.	10.00
43	Construction of Community Toilet at Dhauramunda, Belpahar.	10.00
44	Construction of toilets (latrine and urinal) separate for boys & girls. Construction of boundary wall at Anchalik High School, Khairkuni.	50.00
45	Supply of 100 pair desk & bench at Anchalik High School, Khairkuni.	5.00
46	Supply and installation of water filter at Anchalik High School.	2.00
47	Construction of boundary wall at Govt. Primary School, Sarandamal.	40.00
48	Adoption of Bandhabahal village and development of it as a model village .	500.00
49	Supply and installation of water filter at Govt. Primary School, Bandhabahal.	2.00
50	Construction of a Ladies Hostel at Mahima Higher Secondary School, Mahimapuram, Panchgaon.	35.00
51	Construction of a G.P. level Kalyan Mandap with attach latrine, bathroom, kitchen and boundary wall at Adhapada of Kushraloi GP.	50.00
52	Construction of CC road at pada no.3 of Adhapada, Kushraloi.	30.00
53	Construction of CC road at pada no.4 of Adhapada, Kushraloi.	30.00
54	Construction of CC road from Samlei Mandir to Telenpali Chowkh, Kushraloi.	30.00
55	Installation of Street Light with solar system at Jamuna & Balikuduli, Kushraloi.	10.00
56	Installation of Street Light with solar system at Adhapada village, Kushraloi.	10.00
57	Installation of 6 Street Light with solar system at Kushraloi basti.	10.00
58	Construction of rest shed at J.L High School, Adhapada.	5.00
59	Renovation of Remanda Talibandha (pond).	30.00
60	Renovation of Sadera Talibandha (pond), Remanda GP.	30.00
61	Construction of Angan Wadi Centre at Kultapara, Remanda.	15.00
62	Construction of C.C road from Ainlajharan Bijay House to Shib Temple, Remanda.	25.00
63	Repairing of class rooms of existing Government Primary School of Jamuna village of Kushraloi GP under CSR of Lakhanpur Area (Lakhanpur OCP) of MCL.	25.00
64	Construction of rest room at Playground of Jamuna village of Kushraloi GP under CSR of Lakhanpur Area (Lakhanpur OCP) of MCL.	20.00
65	Repairing of existing wells of Jamuna village of Kushraloi GP under CSR of Lakhanpur Area (Lakhanpur OCP) of MCL.	15.00
66	Development of road to Dungripada near pond of Jamuna village of Kushraloi GP under CSR of Lakhanpur Area (Lakhanpur OCP) of MCL.	20.00
67	Construction of Kalyan Mandap at Naikpada, Kanaktora.	30.00
68	Construction of CC road (400 mtr.) from Kanaktora basti to Nadi ghat.	5.00
69	Construction of Kalyan Mandap at Dayadera, Jharsuguda, Kanaktora.	30.00
70	Reducing school dropout in Lakhanpur block, Jharsuguda through activity based learning (a 2 years project)	23.00
71	Improvement (construction of BM road) of Grindola main road (B.R.O) to Munda Pada (Colony Pada) road (approx. 3 km), Banjari GP.	90.00
72	Construction of drain from Grindola football field to Luhurapada (approx.1.5 km), Banjari GP.	25.00
73	Renovation of Kadelkanta at Grindola, Banjari GP.	20.00
74	Construction of a Kalyan Mandap at Chaunrimahul, Banjari GP.	30.00
75	Construction of a Kalyan Mandap at Grindola, Banjari GP.	30.00
76	Deposit of Rs.98,00,000/- for development of six Govt. High Schools of Jharsuguda on depository basis to the District Mo-School Abhiyan Parichalana Sangathan fund under CSR of Lakhanpur Area.	98.00
77	Conducting Swachhata Pakhwada, Swachhata Hi Seva in 2023.	2.00
78	Community development and welfare works for the poor, vulnareable, weaker section, destitute, disadvantaged group of people by Mahila Mandal, Lakhanpur Area.	2.00
79	Health camps.	2.00
Total		2965.95

Annexure IX
Effluent Quality Monitoring

Sampling Station	Date of Sampling	pH	Oil & Grease	TSS	COD
Mine Sump Water	11-APR-23	7.27	<4.0	28	16
Outlet of ETP	11-APR-23	7.72	<4.0	32	24
Inlet of ETP	11-APR-23	7.34	<4.0	40	44
Inlet of Secondary Sedimentation Tank	11-APR-23	7.14	<4.0	44	36
Inlet of Secondary Sedimentation Tank	11-APR-23	7.61	<4.0	32	20
Outlet of Secondary Sedimentation Tank	27-APR-23	7.79	<4.0	36	28
Outlet of Secondary Sedimentation Tank	10-MAY-23	6.91	<4.0	38	28
Outlet of Secondary Sedimentation Tank	24-MAY-23	7.92	<4.0	44	32
Outlet of Secondary Sedimentation Tank	13-JUNE-23	6.69	<4.0	38	24
Outlet of Secondary Sedimentation Tank	13-JUNE-23	6.78	<4.0	34	20
Mine Sump Water	13-JULY-23	7.02	<4.0	24	12
Outlet of ETP	13-JULY-23	6.94	<4.0	40	28
Inlet of ETP	13-JULY-23	5.72	<4.0	48	36
Inlet of Secondary Sedimentation Tank	13-JULY-23	5.86	<4.0	58	32
Outlet of Secondary Sedimentation Tank	13-JULY-23	7.12	<4.0	46	16
Outlet of Secondary Sedimentation Tank	20-JULY-23	6.83	<4.0	24	36
Outlet of Secondary Sedimentation Tank	11-AUG-23	6.88	<4.0	64	32
Outlet of Secondary Sedimentation Tank	25-AUG-23	6.84	<4.0	48	44
Outlet of Secondary Sedimentation Tank	12-SEPT-23	7.76	<4.0	24	20
Outlet of Secondary Sedimentation Tank	21-SEPT-23	6.92	<4.0	34	28


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Test Report
GROUND WATER LEVEL MONITORING DATA
Area:
Lakhanpur
Project:
Belpahar OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
5/29/2023	Piezometer No MIP 08; Village Kusraloi, Inside the Premises of PrathamikVidyalaya Latitude 21.01800 N Longitude 85.13027 E	8.0
5/29/2023	Piezometer No MIP 07; Infront of DAV school Bandbahal, Inside colonysubstationLatitude 21.01800 N Longitude 85.13027 E	4.0


Project:
Lakhanpur OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
5/29/2023	Piezometer No MIP 10; Village Dahaldera; Inside the Premises of UP School. Latitude 21 ° 46 '51" N Longitude 83 ° 48'47" E	17.10
5/31/2023	Piezometer No MIP 09; Village Junion; Inside the Premises of State GovtHorticulture InstituteLatitude 21°45'49" N Longitude 83°47'42" E.	10.20

Project:
Lilari OCP

Date of Sampling	Name of the Station	Ground Levels (in meter)
5/29/2023	Piezometer No MIP 06; Infront of Lilari Mines Project Office. Latitude 21.77826 N Longitude 85.8580 E	38.10


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Surface Water Quality Data Lakhanpur Area

Project/OCP	Lakhanpur		IS:2296-1982 Tolerance for inland Surface water (Class C)
	Pulijhor Stream Near Tingismal Village as u/s for Lakhanpur OCP	Pulijhor stream Near Darlipalil Village before Confluence to Lilari Nallah as d/s Water of Lakhanpur OCP	
NAME OF STATIONS			
Date of Sampling	18-May-23	18-May-23	
pH	7.72	7.83	6.5-8.5
Dissolved Oxygen(mg/L)	7.0	6.2	4
BOD (3 days 27oc)(mg/L)	<2	<2	3
Color (Hazen unit)	4	2	300
Total dissolved solids (mg/L)	64	68	1500
TSS(mg/L)	36	44	-
Total Hardness(mg/L)	32.0	36.0	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	50
Chlorides(mg/L)	19.82	21.80	600
Sulphate(mg/L)	13.27	9.71	400
Nitrate(mg/L)	<2.0	<2	50
Fluoride(mg/L)	<0.3	<0.3	1.5
Cadmium(mg/L)	0.0018	0.0016	0.01
Arsenic(mg/L)	<0.005	<0.005	0.2
Lead(mg/L)	0.011	0.010	0.1
Zinc(mg/L)	0.090	0.110	15
Oil & Grease (mg/L)	<4.0	<4.0	0.1

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Surface Water Quality Data Lakhanpur Area

Project/OCP	Lakhanpur			IS:2296-1982 Tolerance for inland Surface water (Class C)
	Lilari Nallah Near Kudaloi Village as u/s of Lakhanpur OCP	Lilari Nallah Near Lilari Bridge as d/s of Lakhanpur OCP	Karlajori Pond	
NAME OF STATIONS				
Date of sampling	18-May-23	18-May-23	18-May-23	
pH	7.69	7.74	8.12	6.5-8.5
Dissolved Oxygen(mg/L)	5.8	5.2	6.9	4
BOD (3 days 27°C)(mg/L)	<2	<2	<2	3
Color (Hazen unit)	3	3	4	300
Total dissolved solids (mg/L)	56	60	128	1500
TSS(mg/L)	42	54	62	-
Total Hardness(mg/L)	32.0	36	40.0	-
Copper(mg/L)	<0.03	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	<0.1	50
Chlorides(mg/L)	17.8	19.82	51.53	600
Sulphate(mg/L)	3.17	5.29	8.34	400
Nitrate(mg/L)	<2.0	<2.0	<2	50
Fluoride(mg/L)	<0.3	<0.3	<0.3	1.5
Cadmium(mg/L)	0.0014	0.0017	0.0013	0.01
Arsenic(mg/L)	<0.005	<0.005	<0.005	0.2
Lead(mg/L)	0.011	0.010	<0.005	0.1
Zinc(mg/L)	0.13	0.10	0.07	15
Oil & Grease (mg/L)	<4.0	<4.0	<4.0	0.1

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Surface Water Quality Data Lakhanpur Area

Project/OCP	Lakhanpur		IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Pulijhor Stream Near Tingismal Village as u/s for Lakhanpur OCP	Pulijhor stream Near Darlipalil Village before Confluence to Lilari Nallah as d/s Water of Lakhanpur OCP	
Date of Sampling	18-May-23	18-May-23	
Selenium(mg/L)	<0.005	<0.005	0.05
Total Chromium (mg/L)	<0.01	<0.01	-
Phenolics(mg/L)	<0.001	<0.001	0.005
MPN (Index/100 ml)	6.8	6	-

Project/OCP	Lakhanpur			IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Lilari Nallah Near Kudaloi Village as u/s of Lakhanpur OCP	Lilari Nallah Near Lilari Bridge as d/s of Lakhanpur OCP	Karlajori Pond	
Date of sampling	18-May-23	18-May-23	18-May-23	
Selenium(mg/L)	<0.005	<0.005	<0.005	0.05
Total Chromium (mg/L)	<0.01	<0.01	<0.01	-
Phenolics(mg/L)	<0.001	<0.001	<0.001	0.005
MPN (Index/100 ml)	12	9.2	11	-

Project/OCP	Belpahar	IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Adhapada village	
Date of sampling	18-May-23	
Selenium(mg/L)	<0.005	0.05
Total Chromium (mg/L)	<0.01	-
Phenolics(mg/L)	<0.001	0.005
MPN (Index/100 ml)	15	-

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Surface Water Quality Data Lakhanpur Area

Project/OCP	Lakhanpur		IS:2296-1982 Tolerance for inland Surface water (Class C)
	Lilari Nallah Near Kudaloi Village as u/s of Lakhanpur OCP	Lilari Nallah Near Lilari Bridge as d/s of Lakhanpur OCP	
NAME OF STATIONS			
Date of sampling	22-Aug-23	22-Aug-23	
pH	7.06	7.18	6.5-8.5
Color (Hazen unit)	2	4	300
Dissolved Oxygen(mg/L)	6.8	6.4	4
BOD (3 days 27oc(mg/L)	<2	<2	3
Chlorides(mg/L)	5.95	5.95	600
Sulphate(mg/L)	24.25	23.25	400
Nitrate(mg/L)	<2.0	<2.0	50
Fluoride(mg/L)	0.36	0.47	1.5
Total Hardness(mg/L)	16.19	20.24	-
Total dissolved solids (mg/L)	58	66	1500
TSS(mg/L)	50	56	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	0.15	0.14	50
Zinc(mg/L)	0.08	0.07	15
Lead(mg/L)	<0.005	<0.005	0.1
Cadmium(mg/L)	<0.001	<0.001	0.01
Total Chromium (mg/L)	<0.01	<0.01	-
Arsenic(mg/L)	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	0.05
Hexavalent Chromium,(mg/L)	<0.05	<0.05	-
Phenolics(mg/L)	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	0.1
MPN (Index/100 ml)	23	26	-

[Signature]
Authorised Signatory
CMPDI, RI-VII, LAB
BHUBANESWAR

[Signature]
O. I. C.
Env. Lab
CMPDI, RI-VII
Bhubaneswar



cmpdi

A Mini Ratna Company

Surface Water Quality Data Lakhanpur Area

Project/OCP	Lakhanpur		IS:2296-1982 Tolerance for inland Surface water (Class C)
	Pulijhor Stream Near Tingismal Village as u/s for Lakhanpur OCP	Pulijhor stream Near Darlipalil Village before Confluence to Lilari Nallah as d/s Water of Lakhanpur OCP	
NAME OF STATIONS			
Date of Sampling	22-Aug-23	22-Aug-23	
pH	7.20	7.70	6.5-8.5
Color (Hazen unit)	3	2	300
Dissolved Oxygen(mg/L)	8.0	7.0	4
BOD (3 days 27oc(mg/L)	<2	<2	3
Chlorides(mg/L)	20.00	22.00	600
Sulphate(mg/L)	13.00	10.00	400
Nitrate(mg/L)	<2.0	<2	50
Fluoride(mg/L)	<0.3	<0.3	1.5
Total Hardness(mg/L)	33.0	37.0	-
Total dissolved solids (mg/L)	62	67	1500
TSS(mg/L)	34	42	-
Copper(mg/L)	<0.03	<0.03	1.5
Iron(mg/L)	<0.1	<0.1	50
Zinc(mg/L)	0.090	0.110	15
Lead(mg/L)	0.011	0.010	0.1
Cadmium(mg/L)	0.0018	0.0016	0.01
Total Chromium (mg/L)	<0.01	<0.01	-
Arsenic(mg/L)	<0.005	<0.005	0.2
Selenium(mg/L)	<0.005	<0.005	0.05
Hexavalent Chromium,(mg/L)	<0.05	<0.05	-
Phenolics(mg/L)	<0.001	<0.001	0.005
Oil & Grease (mg/L)	<4.0	<4.0	0.1
MPN (Index/100 ml)	10	11	-

Janvati

[Handwritten Signature]



cmpdi

A Mini Ratna Company

Surface Water Quality Data Lakhanpur Area

Project/OCP	Lakhanpur	IS:2296-1982 Tolerance for inland Surface water (Class C)
NAME OF STATIONS	Karlajori Pond	
Date of sampling	22-Aug-23	
pH	7.08	6.5-8.5
Color (Hazen unit)	3	300
Dissolved Oxygen(mg/L)	7.0	4
BOD (3 days 27oc(mg/L)	<2	3
Chlorides(mg/L)	50	600
Sulphate(mg/L)	8.00	400
Nitrate(mg/L)	<2	50
Fluoride(mg/L)	<0.3	1.5
Total Hardness(mg/L)	40.0	-
Total dissolved solids (mg/L)	62	1500
TSS(mg/L)	55	-
Copper(mg/L)	<0.03	1.5
Iron(mg/L)	<0.1	50
Zinc(mg/L)	0.07	15
Lead(mg/L)	<0.005	0.1
Cadmium(mg/L)	<0.001	0.01
Total Chromium (mg/L)	<0.01	-
Arsenic(mg/L)	<0.005	0.2
Selenium(mg/L)	<0.005	0.05
Hexavalent Chromium,(mg/L)	<0.05	-
Phenolics(mg/L)	<0.001	0.005
Oil & Grease (mg/L)	<4.0	0.1
MPN (Index/100 ml)	20	-

Januati

Januati

Nimapara: One Arjun Dalai of Badatara was found lying near Bhairipur canal embankment here on Tuesday allegedly after consuming poison. The victim, son of Radhashyam Dalai, was rushed to the Gop CHC and later shifted to the Capital hospital after his condition deteriorated.

RISE MODI, SHAH ARREST FALLOUT?

cluding pending as- er AP Reorganisa- lease of funds due may be noted that leased funds gram project also disbursed as compensa- the revenue d by the State division of

an ally of BJP, had announced an alliance with the TDP soon after Naidu's arrest.



sources said could be appraising aders about the ar- Chief Minister N Naidu and the preal situation in the e recalled that JSP,

Meanwhile, the Chief Minister will be participating in the review meeting on Left-Wing extremism that will be chaired by the Centre at Vigyan Bhavan on Friday. This meeting assumes significance as Assembly polls are around the corner in several states across the country. Jagan, who was also scheduled to participate in the mass housewarming of Jagananna Housing colonies in Kakinada district on Thursday, had cancelled the programme.

HOY

price slashed by for Ujjwala users

@ New Delhi

ent on Wednesday of an LPG cylinder wala beneficiaries face voters in five mbly elections be- of this calendar

second price cut in the Centre. In Au- d the price of each 000 for all consum- cylinder for an ciary in Delhi will while the non-sub- is ₹1,103. Rajas- a Pradesh, Mizot- ttisgarh, and e slated to go to he next couple of

, the government

extended the Ujjwala scheme to 75 lakh more consumers for over three years. With this addition, the total beneficiaries would come to 10.35 crore.

"The Centre has approved an increase in subsidy amount for Pradhan Mantri Ujjwala Yojana beneficiaries from ₹200 to ₹300 per LPG cylinder. A lot of development work has been done for the welfare of women and the poor in the past nine years," said Anurag Thakur, Union I&B minister.

According to Emkay Global, the mque will cost the exchequer ₹3,600 crore annually. Also, it won't have any impact on oil marketing companies as the subsidy is directly given to the Ujjwala Yojana beneficiaries by the government.

EXPRESS READ

Retired engineer on hunger strike

Retired engineer Syamsundar Nayak, the husband of state BJP

MCL MAHANADI COALFIELDS LIMITED
(A Subsidiary of Coal India Limited)
JAGRUTI VIHAR, BURLA-768020, DIST-SAMBALPUR, ODISHA
Ph.(EPABX):0663-2542461 to 469, Website:www.mahanadicoal.in

NOTICE

It is for information for all concerned that, Lakhanpur Opencast Project, Lakhanpur area of Mahanadi Coalfields Limited, Post: Ubuda, Via-Belpahar, Dist: Jharsuguda (Odisha) has been accorded with Environment Clearance for 22.5 MTPA vide Letter No. J-11015/391/2012-IA. II (M) dated 18.09.2023 by the Ministry of Environment, Forest and Climate Change, New Delhi. A copy of clearance letter is available with the Odisha State Pollution Control Board and may also be seen at the Website of Ministry of Environment, Forest and Climate Change at www.https://environmentclearance.nic.in/. Project Officer Lakhanpur OCP E-5171

SBI STATE BANK OF INDIA
Local Head Office, III/1,
Pandit Jawaharlal Nehru Marg, Bhubaneswar - 751001

PUBLIC NOTICE - EMPANELMENT OF VALUERS (LAST DATE: 20.10.2023)

State Bank of India, Local Head Office, Bhubaneswar invites applications for empanelment of Valuers for a period of three years from the date of empanelment. The valuers already on the Bank's panel have also to apply afresh. The valuers shall submit their applications in the prescribed formats along with relevant enclosures / documents etc., to the nearest Business Units / Branches by 20.10.2023 for further scrutiny, recommendation and submission to appropriate authority. The confirmation of submission with the name of the Branch / Business unit should be mailed to agmcpm.lhobhu@sbi.co.in. For more details please visit our official website www.sbi.co.in - "SBI in the news" - Show More - "Empanelment of vendors". The bank reserves the right to amend / modify any terms and conditions of empanelment and withdraw the advertisement without any notice.

Date: 05.10.2023

Authorized Signatory

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA, ODISHA.

No. VSSUT/SRIC/1148 / 2023

Date: 03.10.2023

ADVERTISEMENT FOR POSITION OF JUNIOR RESEARCH FELLOW

KK-238: Applications are invited for the position of the Junior Research Fellow in a project funded by DRDO, Ministry of Defence, Government of India in the Department of Physics, Veer Surendra Sai University of Technology Burla, Sambalpur, Odisha. For more details visit the website: www.vssut.ac.in.

OIPR- 44006/11/0031/2324

Sd/- REGISTRAR

Government of Odisha

Department of Women and Child Development Odisha State Child Protection Society (OSCPs)

W&CD Complex, Plot no.-483(pt.), Gangaganagar., Unit-VI,

Bhubaneswar- 751003, Ph.No.0674-2393822, E-mail ID-ao.oscps.od@nic.in

No. 2353 /SCPS/CP/ACCT/0002-2023

Date: 03.10.2023

TENDER CALL NOTICE

g-87: Sealed tenders are invited from the interested GST registered caterers/ food suppliers indicating price per head per day for supply of food for the event of "UTSAHA and MAHAK-2023" of Odisha State Child Protection Society (OSCPs).The Tender completed in all respect shall be deposited in the office of Director, Odisha State Child Protection Society (OSCPs), W&CD Complex, Plot no.- 483(pt.), Gangaganagar, Unit-VI, Bhubaneswar- 751001 on or before dated 25.10.2023 by 5 P.M. through Speed Post/Registered Post /Courier only. The application form of the tender containing general bid information and terms & conditions can be downloaded from the website: www.wcdodisha.gov.in from 04.10.2023 to 25.10.2023.

Annexure - XIII

<p>Points raised by the public hearing of M/s MCL Lakhanpur Opencast Project for the expansion project of coal capacity from 10 Mty to 15 Mty held on 27.07.2007 at 11:00 AM At: Gram Panchayat Office, Bandhabahal, Jharsuguda.</p>	<p style="text-align: center;">Status</p>
<p>The mine water along with oil & grease and coal dust is directly discharged to Lilari Nallah without treatment which ultimately meets Hirakud Reservoir. The mine authority should treat this water before discharging it to Lilari Nallah.</p>	<p>Presently no mine water is discharged into Lilari nallah. The mine water is being stored in mine sumps and used for dust suppression activities. An ETP of 50KLPD has been established in the workshop with state of art technology including Oil skimmer, Aeration tanks, Multimedia filter, and Zero discharge circuit. Further surface water sampling is being carried out every six months, the previous sampling was carried out in October 2022 at Upstream and Downstream of Pulijhore and Lilari nallah, and the values were found to be within limit as per IS 2296-1982. (Tolerance for inland surface water (Class C)). The surface water quality report monitoring data is attached as Annexure XI.</p>
<p>Proper land acquisition, rehabilitation & settlement programme should be adopted by the mine as these are not followed properly. MCL authority has not yet provided employment and proper rehabilitation programme for the people displaced in the past.</p>	<p>Proper land acquisition, rehabilitation & settlement programme is being followed (Odisha Rehabilitation and Resettlement Policy, 2006 and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013). Presently there are two rehabilitation sites Jagannath Nagar and Ganesh Nagar. To date, a total of 1248 families have been displaced to date out of which have been provided 1132 employment and 1096 families have been rehabilitated. A scheme has been prepared for two more rehabilitation sites at Chaurimal and Grindola and has been sent to Govt. of Odisha for further approval. Details of R&R enclosed in Form-II</p>
<p>Heavy fugitive emissions occur in the mine. area and coal dusts are deposited on the water</p>	<p>Adequate pollution measures are being taken to reduce. fugitive emissions. Mobile tankers are deployed in haul</p>

<p>of village wells and ponds. So, the mining authority should accept necessary control measures to control the fugitive dust emission and deposition of dust or water bodies.</p>	<p>roads, mining areas, and transportation roads for dust suppression by both departmental and contractual means.</p> <p>Departmental: 28KL (8 Nos.), 9KL (4 Nos.) Contractual: 20KL (19 Nos.), 12KL (2 Nos.), 8 KL (2 Nos.), and Truck mounted Fog Cannon (40m Throw) on a hiring basis.</p> <p>A total of 103 fixed sprinklers have been installed along the Coal Transportation roads (20 nos. from E&M workshop to Milan Chowk, 12 nos. from stockyard1 to Ubuda Chowk, 26 Nos. from Lilari bridge to Manager office, 45 Nos. in Main haul road) in the project and 9 nos. of 100m throw Fog Cannon for dust suppression at CoalStocks and railway sidings. During 2022-23, 9 Nos. of surface miners with dust suppression through water sprinkling were deployed for coal extraction and 100 % (22499997.07 Tonnes) of coal extraction was done through surface miners. A vertical greenery of length 30m has been developed in railway siding No.3. Fabrication and erection of wind barrier (750 m length 10m height) and development of vertical greenery system (300m) at Siding No.3 is in progress. Also, a Mechanical Road sweeper is deployed to keep roads clean and free from debris.</p>
<p>Public road is being used by the mine authority for coal transportation at any stretch of the public road and they should make separate coal transportation road.</p>	<p>No public road is being used for coal transportation. All roads are meant exclusively for coal transportation within the mines and to the sidings and it is being maintained separately with proper grading and dust suppression measures.</p>
<p>The public and transportation roads are full ruts and potholes for which there are spillages of coal on the roads. The mine authorities should repair and maintain these roads regularly to avoid any spillage of coal on the roads.</p>	<p>Regular repair and maintenance of roads are being continuously carried out. Graders and water tankers have been continuously deployed in mines and haul roads to avoid ruts and potholes. Vehicles are loaded optimally, and road conditions are well ensured to avoid coal spillage. A concrete road for a length of 6.93Km (Rs.53.52 Crores) is completed. Work of “Repairing of local sale road from quarry no.4 end to NH-49 at LKPOCP/LKPA” is completed</p>

<p>The OB materials are dumped haphazardly in the OB dump areas and the dumps are not covered with plantation. The mine authority should take initiative to plant trees on the OB dumps</p>	<p>OB Dumps are being made systematically and are reclaimed technically followed by biological reclamation. To date, two external OB dumps have been completely stabilized by plantation over an area of 17.5 Ha (43750 plants) and 129.7 ha of the backfilled area has been biologically reclaimed. Further grass species such as Stylosanthes Hamata, Pennisetum pedicellatum, and Chrysopogon zizanioides are being planted in OB slopes.</p>
<p>The mine authority should carry out compensatory afforestation in the affected localities. The mine authority should carry out roadside avenue plantation also.</p>	<p>During the year 2021-22, plantation over an area of 18.75 Ha (30,000 saplings) was carried out in nearby villages to the project and plantation over an area of 19.8 Ha (31,600 saplings) was carried out over the internally backfilled OB dumps. An area of 34.985 ha of Block plantation and 6.93 Rkm of avenue plantation has also been carried out. Further plantation saplings are being distributed to nearby villages, schools, and employees.</p>
<p>The mine authorities should provide employment to the affected local people on priority basis.</p>	<p>Employment to the project-affected people is given as per the R&R norms (Odisha Rehabilitation and Resettlement Policy, 2006 and Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013). A total of 1132 employments have been provided and the project authority also provides an option for cash compensation in place of employment. Other local people are being engaged in ancillary services (Contractors) as per requirement.</p>

The mine authorities should provide free medical facilities in their hospitals to the affected people including providing Ambulance facilities.

Medical facilities are being provided to the occupants of Ganesh Nagar and Jagannath Nagar rehabilitation colonies with ambulance facilities. During 2019-20, General Preventive Health camps were conducted, details tabulated below:

Village	Date	No of beneficiaries
Chaurimahul	09/08/2019	124
Kusaraloi	21/08/2019	164
Junian	11/09/2019	68
Soldia	20/09/2019	190
Kudaloi	16/10/2019	187
Khadam	06/11/2019	159
Jorabaga	22/11/2019	259
Kirtimal	26/11/2019	380
Kheraulbahal	28/11/2019	100
Kirarama	4/12/2019	218
Kudaloi	13/12/2019	477
Karlajuri	10/01/2020	75
Khaliapali	17/01/2020	77
Ubuda	07/02/2020	80
Kandsar	18/02/2020	268
Karpabahal	25/02/2020	81
Kherualbahal	18/03/2020	174

Health Camp was conducted on 05.02.2023 at Soldia village and on 20.02.2023 at Kirarama village.

The mine authorities should establish a technical training institute in the area to train the local youth for better employment. There is a discrepancy in the fee structure in the schools run by MCL for outside students and children of MCL employees. Hence, uniform fee's structure should prevail in their schools for all students.

MOU has been signed between CIPET, Chennai, and Coal India Limited for conducting a skill development training program for 250 nos. of youth from command areas of MCL.

A MoU has been made with BAIF (Bharatiya Agro Industries Foundation) for "Comprehensive Community Development Programme" through various schemes such as animal husbandry, sustainable agricultural practices, and workshops for Quality-of-life improvement, etc. in 10 villages of Jharsuguda district (Lachhipali, Parasian, Kadamdhee, Dudugaon, Kuruebahal, Jamugaon, Thebra, Samarbaga, Baurkhol, Sagaripali) for five years.

	<p>Further vocational training programs and apprenticeship training programs are being organized at the project level. The land oustees employed in the company are being trained for Skill up-gradation through ITI programs.</p> <p>The fee structure is fixed by school authorities and the project does not have a role in the fixation of the fees, however, the project encourages the participation of students of other schools in the various events conducted by the project.</p>										
<p>Due to heavy air pollution in the area, commutates face a lot of problem. Hence mine authority should provide water sprinkling arrangements on the roads and other dust generating points.</p>	<p>Mobile tankers are deployed in haul roads, mining areas, and transportation roads for dust suppression by both departmental and contractual means.</p> <p>Departmental: 28KL (7 Nos.), 9KL (4 Nos.) Contractual: 20KL (19 Nos.), 12KL (2 Nos.), 8 KL (2 Nos.), and Truck mounted Fog Cannon (40m Throw) on a hiring basis.</p> <p>9 nos. of 100m throw trolley type fog cannon have been deployed at Coalstocks and railway siding for dust suppression. Also, a Mechanical Road sweeper is deployed to keep roads clean and free from debris.</p>										
<p>Due to mining activities, the groundwater table of the area has lower down. Hence the mine authorities should recharge the groundwater table.</p>	<p>Backfilling of the voids and Afforestation have been done to maintain the groundwater level as far as possible. Two nos. of piezometers are installed under the area of Lakhanpur project which is located at 21°45'49.21"N 83°47'42.22"E and 21°46'51.61"N 83°48'47.60"E to monitor the groundwater quality and level. Monitoring for water levels is also carried out in nearby village wells.</p> <table border="1" data-bbox="776 1661 1511 1822"> <tr> <td rowspan="2">Nov 2022</td> <td>Kansar</td> <td>2.57 m</td> </tr> <tr> <td>Khairkuni</td> <td>5.56 m</td> </tr> <tr> <td rowspan="2">Jan 2023</td> <td>Kansar</td> <td>1.57 m</td> </tr> <tr> <td>Khairkuni</td> <td>1.93 m</td> </tr> </table>	Nov 2022	Kansar	2.57 m	Khairkuni	5.56 m	Jan 2023	Kansar	1.57 m	Khairkuni	1.93 m
Nov 2022	Kansar		2.57 m								
	Khairkuni	5.56 m									
Jan 2023	Kansar	1.57 m									
	Khairkuni	1.93 m									
<p>The mine authority should clarify regarding considering 10 km radius area as a study area to prepare the EIA report and highlight the</p>	<p>EIA and EMP report of Lakhanpur OCP highlights the socio-economic scenario, Environmental quality, information of Biodiversity, Hydrological assessment within</p>										

back ground concentration.	the Buffer zone, which comprises the area of a 10 km radius around the periphery of the core zone.
State Pollution Control Board, Odisha should monitor the air and water quality regularly.	Monitoring of the air and water quality is being done regularly by CMPDIL as per the EC conditions (Air Quality and Noise: Fortnightly, Effluent Quality: Quarterly, Drinking water and Village wells: Monthly, Heavy metal, and Surface water quality: Six-monthly, Water level: Every season) and reports are sent to State Pollution Control Board, Odisha. The OSPCB also monitors the air and water quality regularly.
Control Measures in EIA/EMP report	Action taken
Dust extractor in drill Machines	10 Nos of drill operated with dust extractor system
Fixed sprinkler at CHP, railway siding, etc. Mobile water tanker for quarry, haul road, transport road, CHP, etc.	No CHP, fixed sprinklers, and mobile tankers deployed for dust suppression in siding and haul roads respectively.
Green cover development for control of dust.	External OB dump, natural vegetation, and other biologically reclaimed area act as green cover for dust control
Provision of eco-friendly surface mines for production	100 % coal production through surface miners
Ambient air quality Monitoring	4 Nos. of stations established, and air quality monitored every fortnight and 1 no of CAAQMS was commissioned at Lakhanpur Tahsil office.
Coal transportation roads	Adequate grading and water spraying is being carried out
Domestic effluent	An STP of 1.7 MLD capacity has been established at the colony.
Industrial effluent	An ETP of 50 KLPD has been provided with state of art technology with Oil skimmer, aeration tank, and multimedia filter with zero discharge arrangement.
Mine effluent	No mine water is discharged in nearby water bodies. Mine water is collected in mine sumps and used for mining activities

Land Restoration / Reclamation Monitoring of more than 5 million cu.m (Coal+OB) Capacity Opencast Coal Mines of Mahanadi Coalfields Limited based on Satellite Data of the Year 2020



Submitted to
Mahanadi Coalfields Limited



cmpdi
A Mini-Ratna Company

**Land Restoration/Reclamation Monitoring of more than 5 million
cu.m (Coal+OB) Capacity Opencast Coal Mines of Mahanadi
Coalfields Limited based on Satellite Data of the Year 2020**

March 2021



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

Table 1: Project wise Land Reclamation Status in Opencast Projects of MCL based on Satellite Data of the year 2020																			(Area in Sq.km.)		
Sl. No.	Project	Total Leasehold Area 2019	Total Leasehold Area 2020	Technical Reclamation		Plantation						Area Under Active Mining	Total Excavated Area	Total Area Under Plantation (%Green Cover Generated in Leasehold)		Total Area Under Reclamation					
				Area under Backfilling		Biological Reclamation		Other Plantation						2019	2020	2019	2020	2019	2020		
						Plantation on Excavated/Backfilled Area		Plantation on External Over Burden Dump	Social Forestry, Avenue Plantation Etc.												
1	2	3	4	5		6		7				8		9		10(=5+6+9)		11(=6+7+8)		12(=5+6)	
				2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
1	Ananta	14.20	14.20	2.35	2.40	1.02	1.05	0.11	0.10	0.23	0.22	1.18	1.45	4.55	4.90	1.36	1.37	3.37	3.45		
				51.65%	48.98%	22.42%	21.43%					25.93%	29.59%			9.58%	9.65%	74.07%	70.41%		
2	Balram	10.21	13.09	2.52	2.80	1.03	1.06	0.23	0.22	0.20	0.35	0.95	1.03	4.50	4.89	1.46	1.63	3.55	3.86		
				56.00%	57.26%	22.89%	21.68%					21.11%	21.06%			14.30%	12.45%	78.89%	78.94%		
3	Lingaraj	7.26	7.26	1.44	1.70	0.15	0.15	0.32	0.32	0.34	0.33	2.27	2.19	3.86	4.04	0.81	0.80	1.59	1.85		
				37.31%	42.08%	3.89%	3.71%					58.81%	54.21%			11.16%	11.02%	41.19%	45.79%		
4	Bharatpur	9.95	9.27	2.57	2.63	1.65	1.66	0.45	0.45	0.17	0.16	1.65	1.66	5.87	5.95	2.27	2.27	4.22	4.29		
				43.78%	44.20%	28.11%	27.90%					28.11%	27.90%			22.81%	24.49%	71.89%	72.10%		
5	Bhubaneswari	7.33	6.58	1.81	1.86	0.01	0.01	0.00	0.00	0.24	0.15	1.82	1.77	3.64	3.64	0.25	0.16	1.82	1.87		
				49.73%	51.10%	0.27%	0.27%					50.00%	48.63%			3.41%	2.43%	50.00%	51.37%		
6	Jagannath	5.54	5.54	0.76	0.84	1.79	1.79	0.00	0.00	0.17	0.17	1.01	0.97	3.56	3.60	1.96	1.96	2.55	2.63		
				21.35%	23.33%	50.28%	49.72%					28.37%	26.94%			35.38%	35.38%	71.63%	73.06%		
7	Hingula	15.75	15.75	1.33	1.48	0.06	0.07	0.21	0.21	0.28	0.28	1.75	2.02	3.14	3.57	0.55	0.56	1.39	1.55		
				42.36%	41.46%	1.91%	1.96%					55.73%	56.58%			3.49%	3.56%	44.27%	43.42%		
8	Belpahar	14.44	14.44	1.79	2.36	0.91	0.90	0.57	0.57	0.52	0.52	1.67	1.33	4.37	4.59	2.00	1.99	2.70	3.26		
				40.96%	51.42%	20.82%	19.61%					38.22%	28.98%			13.85%	13.78%	61.78%	71.02%		
9	Lakhanpur	22.40	22.40	4.12	4.32	0.80	0.83	0.59	0.59	0.45	0.44	2.51	2.99	7.43	8.14	1.84	1.86	4.92	5.15		
				55.45%	53.07%	10.77%	10.20%					33.78%	36.73%			8.21%	8.30%	66.22%	63.27%		
10	Samleswari	7.13	13.35	2.90	2.94	0.68	0.70	0.48	0.49	0.16	0.50	1.26	1.27	4.84	4.91	1.32	1.69	3.58	3.64		
				59.92%	59.88%	14.05%	14.26%					26.03%	25.87%			18.51%	12.66%	73.97%	74.13%		
11	Lajkura	4.68	7.21	1.15	1.20	0.16	0.15	0.22	0.23	0.06	0.16	0.84	0.89	2.15	2.24	0.44	0.54	1.31	1.35		
				53.49%	53.57%	7.44%	6.70%					39.07%	39.73%			9.40%	7.49%	60.93%	60.27%		
12	Siarmal	22.90	22.90	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.00	0.56	0.56	0.00	0.00		
				0.00%	0.00%	0.00%	0.00%					0.00%	0.00%			2.45%	2.45%	-	-		
13	Basundhara W Extn.	3.23	3.23	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00		
				0.00%	0.00%	0.00%	0.00%					0.00%	0.00%			0.93%	0.93%	-	-		
	Total (A)	145.02	155.22	22.74	24.53	8.26	8.37	3.18	3.18	3.41	3.87	16.91	17.57	47.91	50.47	14.85	15.42	31.00	32.90		
				47.46%	48.60%	17.24%	16.58%					35.30%	34.81%			10.24%	9.93%	64.70%	65.19%		
		2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020	2018	2020		
14	Garjanbahal	6.54	6.54	0.00	0.03	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.47	0.00	0.50	0.02	0.02	0.00	0.03		
				0.00%	6.00%	0.00%	0.00%					0.00%	94.00%			0.31%	0.31%	0.00%	6.00%		
	Total (B) (MCL)	151.56	161.76	22.74	24.56	8.26	8.37	3.18	3.18	3.43	3.89	16.91	18.04	47.91	50.97	14.87	15.44	31.00	32.93		
				47.46%	48.19%	17.24%	16.42%					35.30%	35.39%			9.81%	9.55%	64.70%	64.61%		

(% is calculated with respect to excavated area as applicable)

Note: In reference to the above Table-1, different parameters are classified as follows:

1. Area under **Biological Reclamation** includes Area under Plantation done on Backfilled Area only.
2. Area under **Technical Reclamation** includes Area under Barren Backfilling only.
3. Area under **Active Mining** includes Coal Quarry, Advance Quarry Site, Quarry Filled with Water, if any. Areas under coal dump have been excluded from Active Mining in this table.
4. Social Forestry and Plantation on External OB Dumps are not included in Biological Reclamation and are put under separate categories as shown in the Table above.
5. (%) calculated in the above Table is in respect to Total Excavated Area except for "Total Area under Plantation" where % is in terms of "Leasehold Area"
6. The leasehold boundaries of Balram, Bharatpur, Bhubaneswari, Samleswari and Lajkura project have been modified as per latest EC
7. Garjanbahal OC, having the capacity > 5 mcm (Coal+OB), is included for annual satellite monitoring.

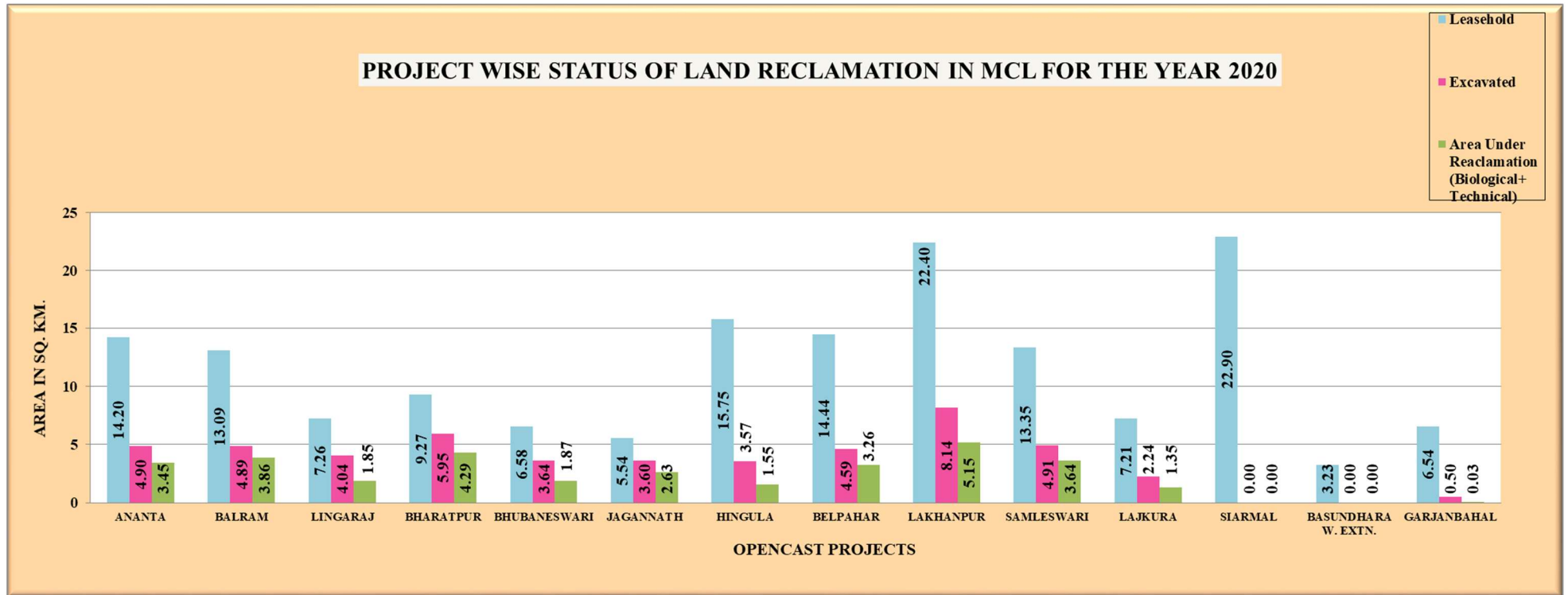
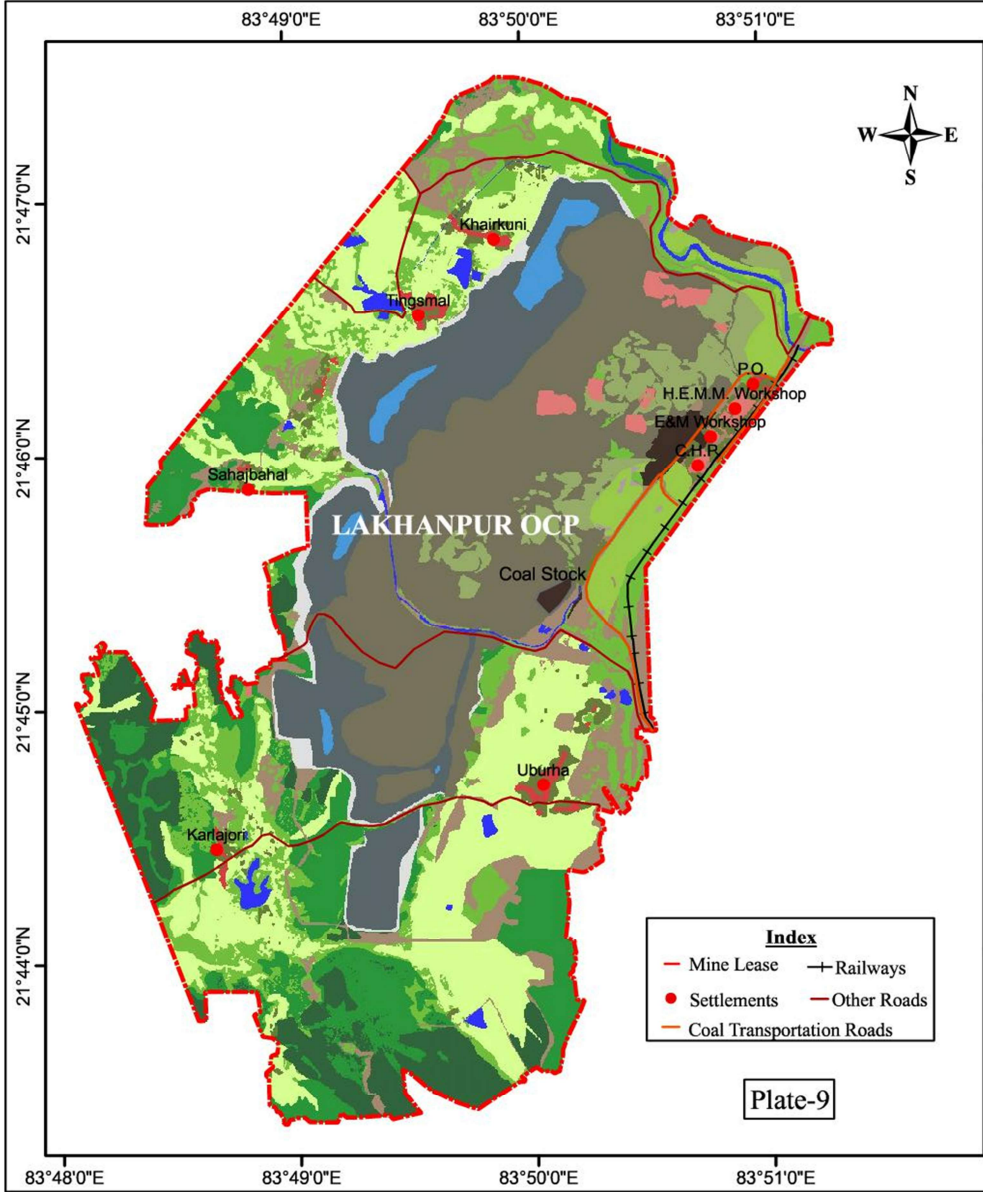



Fig.1: Land reclamation status in OC projects of MCL for the year 2020

Table 2.2: STATUS OF LAND RESTORATION / RECLAMATION IN MAHANADI COALFIELDS LIMITED BASED ON SATELLITE DATA OF THE YEAR 2020

		(Area in Sq. Kms.)																	
		BELPAHAR		LAKHANPUR		SAMLESWARI		LAJKURA		SIARMAL		BASUNDHARA W EXTN		GARJANBAHAL		TOTAL		ALL TOTAL	
		Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
FORESTS	Dense Forest	0.00	0.00	1.48	6.61	0.21	1.57	0.79	10.96	0.00	0.00	0.00	0.00	0.51	7.79	2.99	3.32	5.19	3.21
	Open Forest	0.91	6.30	2.45	10.94	0.56	4.19	0.74	10.26	0.85	3.71	0.79	24.46	0.75	11.46	7.05	7.83	10.90	6.74
	Total Forest (A)	0.91	6.30	3.93	17.54	0.77	5.77	1.53	21.22	0.85	3.71	0.79	24.46	1.26	19.25	10.04	11.15	16.09	9.95
SCRUBS	Scrubs (B)	3.46	23.96	2.78	12.41	2.61	19.55	1.05	14.56	7.27	31.75	1.36	42.11	1.18	18.03	19.71	21.88	29.66	18.34
PLANTATION	Social Forestry	0.52	3.60	0.44	1.96	0.50	3.74	0.16	2.22	0.56	2.45	0.03	0.93	0.02	0.31	2.23	2.48	3.89	2.40
	Plantation on External OB Dump	0.57	3.95	0.59	2.63	0.49	3.67	0.23	3.19	0.00	0.00	0.00	0.00	0.00	0.00	1.88	2.09	3.18	1.97
	Plantation on Backfill/Excavated Area(Biological Reclamation)	0.90	6.23	0.83	3.71	0.70	5.24	0.15	2.08	0.00	0.00	0.00	0.00	0.00	0.00	2.58	2.86	8.37	5.17
	Total Plantation (Green Cover) (C)	1.99	13.78	1.86	8.30	1.69	12.66	0.54	7.49	0.56	2.45	0.03	0.93	0.02	0.31	6.69	7.43	15.44	9.55
Total Vegetation (A+B+C)		6.36	44.04	8.57	38.26	5.07	37.97	3.12	43.27	8.68	37.90	2.18	67.49	2.46	37.59	36.44	40.45	61.20	37.83
ACTIVE MINING	Coal Dump	0.11	0.76	0.14	0.63	0.19	1.42	0.07	0.97	0.00	0.00	0.00	0.00	0.22	3.36	0.73	0.81	1.87	1.16
	Coal Quarry	0.99	6.86	2.32	10.36	0.81	6.07	0.75	10.40	0.00	0.00	0.00	0.00	0.36	5.50	5.23	5.81	11.96	7.39
	Advance Quarry Site	0.09	0.62	0.38	1.70	0.14	1.05	0.10	1.39	0.00	0.00	0.00	0.00	0.11	1.68	0.82	0.91	1.73	1.07
	Quarry Filled with Water	0.25	1.73	0.29	1.29	0.32	2.40	0.04	0.55	0.00	0.00	0.00	0.00	0.004	0.07	0.90	1.00	4.35	2.69
	Total Area under Active Mining	1.33	9.21	2.99	13.35	1.27	9.51	0.89	12.34	0.00	0.00	0.00	0.00	0.47	7.25	6.95	7.72	18.04	11.16
MINE OPERATION	Barren OB dump	0.13	0.90	0.02	0.09	0.07	0.52	0.13	1.80	0.00	0.00	0.00	0.00	0.30	4.58	0.65	0.72	2.40	1.48
	Area Under Backfilling(Technical Reclamation)	2.36	16.34	4.32	19.29	2.94	22.02	1.20	16.64	0.00	0.00	0.00	0.00	0.03	0.46	10.85	12.05	24.56	15.18
	Total Area under Mine Operation	3.93	27.22	7.47	33.35	4.47	33.48	2.29	31.76	0.00	0.00	0.00	0.00	1.02	15.65	19.18	20.49	46.87	28.98
WASTELANDS	Waste Lands	2.70	18.70	1.71	7.63	2.02	15.13	0.95	13.18	1.86	8.12	0.62	19.20	0.49	7.49	10.35	11.49	17.58	10.87
	Fly Ash Pond/Sand Body	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.11
	Total Wastelands	2.70	18.70	1.71	7.63	2.02	15.13	0.95	13.18	1.86	8.12	0.62	19.20	0.49	7.49	10.35	11.49	17.75	10.97
WATER	Reservoir, nallah, ponds etc.	0.25	1.73	0.28	1.25	0.17	1.27	0.07	0.97	0.22	0.96	0.03	0.93	0.06	0.92	1.08	1.20	2.03	1.25
	Total Waterbodies	0.25	1.73	0.28	1.25	0.17	1.27	0.07	0.97	0.22	0.96	0.03	0.93	0.06	0.92	1.08	1.2	2.03	1.25
AGRICULTURE	Crop Lands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	8.34	0.00	0.00	0.00	0.00	1.91	2.12	1.91	1.18
	Fallow Lands	0.63	4.36	4.01	17.90	1.20	8.99	0.55	7.63	9.52	41.57	0.38	11.76	2.30	35.14	18.59	20.64	27.47	16.98
	Total Agriculture	0.63	4.36	4.01	17.90	1.20	8.99	0.55	7.63	11.43	49.91	0.38	11.76	2.30	35.14	20.50	22.76	29.38	18.16
SETTLEMENTS	Urban Settlement	0.02	0.14	0.00	0.00	0.003	0.02	0.08	1.11	0.02	0.09	0.00	0.00	0.00	0.00	0.12	0.14	0.17	0.11
	Rural Settlement	0.17	1.18	0.14	0.63	0.21	1.57	0.03	0.42	0.69	3.01	0.02	0.62	0.07	1.07	1.33	1.48	2.19	1.35
	Industrial Settlement	0.38	2.63	0.22	0.98	0.21	1.57	0.12	1.66	0.00	0.00	0.00	0.00	0.14	2.14	1.07	1.19	2.18	1.35
	Total Settlements	0.57	3.95	0.36	1.61	0.42	3.17	0.23	3.19	0.71	3.10	0.02	0.62	0.21	3.21	2.52	2.80	4.54	2.81
GRAND TOTAL		14.44	100.00	22.40	100.00	13.35	100.00	7.21	100.00	22.90	100.00	3.23	100.00	6.54	100.00	90.08	100.00	161.76	100.00



Classes		Colour	Area	
Level-I	Level-II		Area (Km ²)	% of Total
Forest Area	Dense Forest		1.48	6.61
	Open Forest		2.45	10.94
	Total Forest Area (A)		3.93	17.54
Scrubs	Scrubs (B)		2.78	12.41
Plantation	Social Forestry		0.44	1.96
	Plantation on Backfill		0.83	3.71
	Plantation on OB Dump		0.59	2.63
	Total Plantation (C)		1.86	8.30
	Total Vegetation(A+B+C)		8.57	38.26
Agriculture	Agriculture Land		4.01	17.90
Waste Land	Waste Land		1.71	7.63
Mining Area	Coal Quarry		2.32	10.36
	Barren OB Dump		0.02	0.09
	Area Under Backfilling		4.32	19.29
	Water Filled Quarry		0.29	1.29
	Coal Dump		0.14	0.63
	Advance Quarry Site		0.38	1.70
	Total Mining Area		7.47	33.35
Settlements	Rural Settlement		0.14	0.63
	Industrial Settlement		0.22	0.98
	Total Settlement Area		0.36	1.61
Water Body	River, Ponds		0.28	1.25
	Total		22.40	100.00

Customer	Mahanadi Coalfields Limited				
Title	Land Reclamation Monitoring of OC Projects				Job No. 561410027
Subject Land Reclamation Status of Lakhanpur OCP based on Satellite Data (R2A/L-IV) of the year 2020	Activity	Name	Designation	Signature	Date
	Prepared	A. Biswas	Mgr.(Geology)	<i>A. Biswas</i>	
	Checked	T. Mondal	CM (RSC)	<i>T. Mondal</i>	
Approved	R. Kumar	GM (Geomatics)	<i>R. Kumar</i>		
	Scale:	0 0.375 0.75 1.5 Km			Sheet 1
	Drg No.	HQ REM 07 A4 20 09			Rev No.0

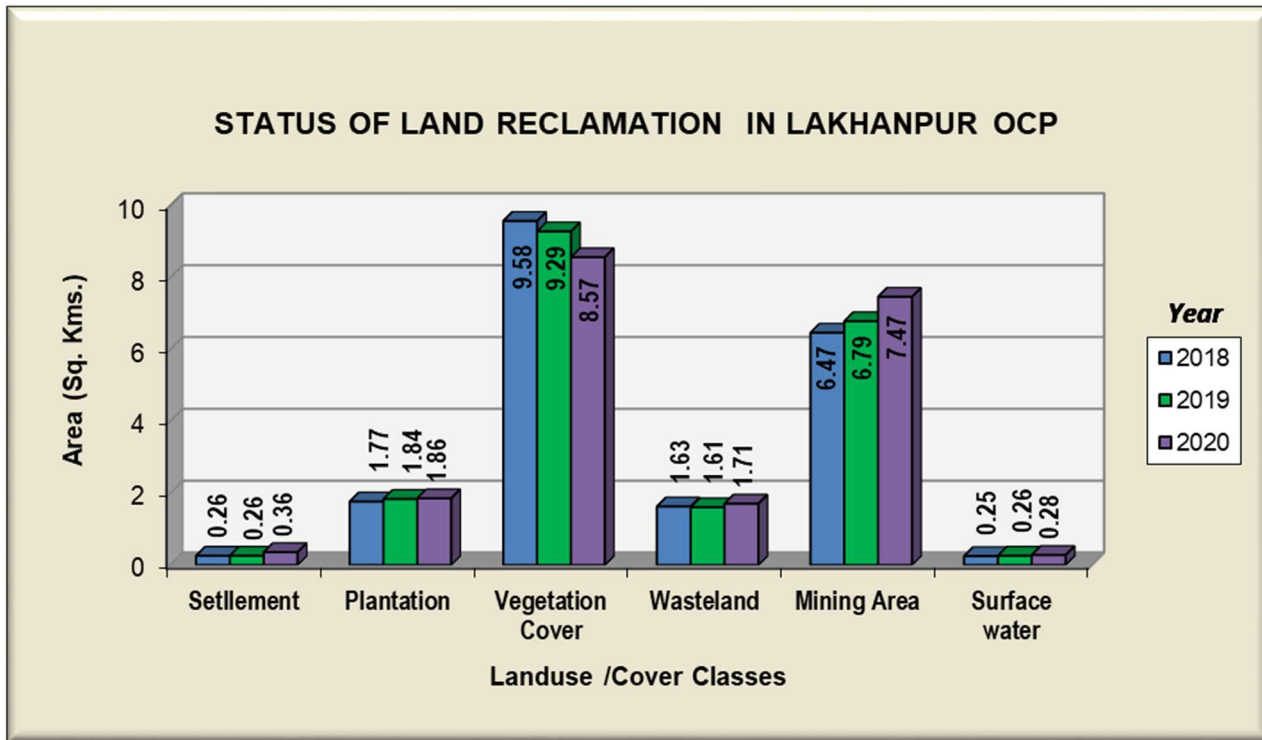


Figure 11