



Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

To,

The General Manager Mining
GARJANBAHAL OCP MAHANADI COALFIELDS LIMITED
At- Garjanbahal OCP, Basundhara Area, PO- Balinga, Tehsil-
Hemgir,,Sundargarh,Orissa-770076

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity
under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC)
in respect of project submitted to the Ministry vide proposal number
IA/OR/CMIN/244474/2021 dated 24 Dec 2021. The particulars of the environmental
clearance granted to the project are as below.

1. EC Identification No.	EC22A042OR123267
2. File No.	J-11015/159/2015-IA-II(M)
3. Project Type	Expansion7
4. Category	A
5. Project/Activity including Schedule No.	1(a) Mining of minerals
6. Name of Project	Garjanbahal OCP Expansion
7. Name of Company/Organization	GARJANBAHAL OCP MAHANADI COALFIELDS LIMITED
8. Location of Project	Orissa
9. TOR Date	N/A

The project details along with terms and conditions are appended herewith from page
no 2 onwards.

Date: 14/02/2022

(e-signed)
Lalit Bokolia
Scientist F
IA - (Coal Mining sector)

*Note: A valid environmental clearance shall be one that has EC identification
number & E-Sign generated from PARIVESH. Please quote identification
number in all future correspondence.*

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F No. J-11015/159/2015- IA-II(M)
Government of India
Ministry of Environment Forest and Climate Change
Impact Assessment Division

Indira ParyavaranBhavan,
JorBagh Road, New Delhi-110 003
Email: lk.bokolia@nic.in Tel: 01124695301

Dated: 14th February, 2022

To,

General Manager Mining
M/s The Mahanadi Coalfields Limited
Garjanbahal OCP Basundhara area PO- Balinga,
Tehsil- Hemgir, Sundargarh-770076 (Odisha)
Email: pogocp2018@gmail.com

Sub: Expansion of Garjanbahal OC mine for increase in production capacity from 13.0 MTPA to 15.6 MTPA (Peak) in land area of 653.83 ha of M/s Mahanadi Coalfields Limited located at Villages Garjanbahal, Balinga, Karlikachhar, Bankibahal, Bangurkela, Tumulia. Tehsil Hemgir, District Sundargarh (Odisha) For Environmental Clearance under Ministry OM dated 15th September, 2017-reg.

Sir,

This has reference to your online proposal No. IA/OR/CMIN/244474/2021 dated 24th December, 2021 for grant of Environmental Clearance to the above project.

2. The Ministry of Environment, Forest and Climate Change has considered the application. It is noted that the proposal is for grant of Environmental Clearance to the project Expansion of Garjanbahal OC mine for increase in production capacity from 13.0 MTPA to 15.6 MTPA (Peak) in land area of 653.83 ha of M/s Mahanadi Coalfields Limited located in IB valley at Villages Garjanbahal, Balinga, Karlikachhar, Bankibahal, Bangurkela, Tumulia. Tehsil Hemgir, District Sundargarh (Odisha).

The project/activity is covered under category 'A' of item 1(a) 'Mining of Minerals' the Schedule to the EIA Notification, 2006

3. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its 25th EAC meeting during 18 -20 January, 2022. The details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meetings, are given as under:

(i) The project area is covered under Survey of India Topo-Sheet No. 64 N/12 & 64 N/16 (RF 1:50000) and is bounded by the geographical coordinates ranging from Latitude- 22o01'16" to 22o02'52" North and Longitude- 83o43'34" to 83o45'14" East.

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Expansion of Garjanbahal Opencast Mine M/s Mahanadi Coalfield Ltd

- (ii) Coal linkage of the project: To various Power Plants (VZP/TNEB, KPKD, KIG, BTMT, BTPC, STDV, MIGK, VSPS etc.)
- (iii) Joint venture cartel has been formed: Not Applicable
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation: Employment to 1567 persons
- (vi) The project is reported to be beneficial in terms of Contribution to the Exchequer (both State and Central Govt.), Improvement of Electrical Power Generation and availability of electricity in rural areas, Overall economic growth of the country.
- (vii) Earlier, the environment clearance to the project was obtained under EIA Notification 2006 vide Ministry's letter no. J-11015/159/ 2015.IA. II(M) dated 09.11.2017 for 13.0 MTPA in the mine lease area of 653.83 Ha.
- (viii) Total mining lease area as per block allotment is 653.83 ha. Mining plan (including Progressive Mine closure plan) has been approved by MCL Board on 16.10.2021
- (ix) The land usage pattern of the project is as under

Pre-mining Land use detail (Area in ha)

Sl. No.	Type of Land	Within ML area	Outside ML area	Total Area
1	Agricultural	398.65	95.89	494.54
2	Waste land	159.45	45.66	205.11
3	Forest Land	88.90	----	88.90
4	Grazing	Nil	----	Nil
5	Surface water bodies	3.84	-----	3.84
6	Others (specify settlement)	2.99	-----	2.99
Total:		653.83	141.55	795.38

Post Mining:

Post Closure Land use status is furnished hereunder: (Area in ha)

Sr. No	Land Use Category	Land use (Area in Ha)					Total
		Left out void/ water body (partly backfilled)	Afforested or arboriculture (backfilled upto ground level)	Forest land (Returned)	Pubic/ Company use	Undisturbed Built up area	

99

1.	Quarry excavation area	100.44	200.48	88.90		--	389.82
2.	Safety zone for blasting	--	5.17	--		-	5.17
3.	OB dump (external)	--	62.58			--	62.58
4.	Road & Infrastructure	-	9.93	--	39.73		49.66
5.	Green belt		67.54				67.54
6.	Undisturbed blasting zone & dipside area	--		--		79.06	79.06
A	Mining lease area	100.44	345.70	88.90	39.73	79.06	653.83
1	Residential colony		6.61		26.44		33.05
2	Rehabilitation site		13.70		54.80		68.5
3	Other infrastructures		8.00		32.00		40.0
B	Outside mining lease area		28.31		113.24		141.55
Total Project Area		100.44	374.01	88.90	152.97	79.06	795.38

- (x) Total geological reserve reported in the Geological Block is 333.97 MT with 235.16 MT as mineable reserves. 200.67 MT is available for extraction as on 01.04.2021. Percent of extraction is 66.7%.
- (xi) 2 seams with thickness ranging from 1.04 - 4.45 m & 9.97 – 16.11 m are workable. Grade of Coal is G-13; Stripping ratio is 1.02 while gradient is 3-7 degrees.
- (xii) Method of mining operations envisages by Opencast Mining by Shovel – Dumper/Ripper-dozer in OB/ parting; Surface miner, pay loader & tipper in coal.
- (xiii) Life of mine is 12 years (from 2021-22)
- (xiv) The project has three external OB dump in an area of 62.58 ha with 80m height
- (xv) (maximum) and 13.77 Mm³ of OB and one internal OB in an area of 289.38 ha with 204.59 Mm³ of OB is envisaged in the project.

- (xvi) Total quarry area is 389.82 ha out of which backfilling will be done in 289.38 ha while final mine void will be created in an area of 100.44 ha of partially backfilled area will remain as final mine void with a maximum depth of 140 m. Backfilled quarry area of 200.48 ha shall be reclaimed with plantation/grass/agriculture. Final mine void will be converted into a water body.
- (xvii) Transportation of coal has been proposed in mine pit to surface by tippers, from surface to siding by conveyors and tippers and at sidings by pay loader/railway rakes. Work order dt: 20-01-2021 issued for 20 MTPA Rapid Loading System with belt & surge bin adjacent to Sardega siding for Rs. 403.66 Cr.
- (xviii) Reclamation Plan in an area of 462.91 ha, comprising of 62.58 ha of external dump, 289.38 ha of internal dump and 67.54 ha of green belt.
- (xix) 88.90 ha of forest land have been reported to be involved in the project. Stage II FC obtained for 88.90 ha vide letter no: 8-11/2015 dated 06.03.2018.
- (xx) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- (xxi) The ground water level has been reported to be varying between 1.15 m to 7.65 m bgl. Total water requirement for the project 4008 KLD (3093 for industrial + 915 for portable use).
- (xxii) NOC from Central Ground Water Authority, New Delhi obtained vide letter no. CGWA/NOC/MIN/ORIG/2021/13468, dated 22.10.2021 and is valid upto 21.10.2023
- (xxiii) Public Hearing was held on date 06.04.2016 at 10 AM at Garjanbahal High School of Garjanbahal village under Hemgir Tehsil of Sundargarh District, Odisha for the new project of coal production capacity 13.0 MTPA over an area of 653.83 Ha of Garjanbahal OCP of M/s. Mahanadi Coalfields Limited.
- (xxiv) Consent to Operate for the existing capacity has been obtained vide 5340/IND-I-CON-6641 Dt 27.03.2021 valid till 31.03.2022 from the State PCB, Odisha.
- (xxv) An unnamed seasonal stream inside the mine lease of the existing project of a span of 930 mtr has already been diverted as per the approved mining plan. No new diversion is required for the proposed expansion project.
- (xxvi) Regular monitoring of ambient air quality is being carried out on fortnightly basis. The documented report is submitted to Regional Office, MoEF&CC, and Bhubaneswar and also to MoEF&CC along with half yearly EC compliance report. In general, the results of ambient air quality monitoring data were found within prescribed limits except few aberrations which can be attributed to the specific local conditions during the day of sampling.
- (xxvii) No court cases are pending in the court. However, the R&R of all the villages falling in this project area are being carried out under the direction of "Claims Commission" appointed by Hon'ble Supreme Court of India.
- (xxviii) The project does not involve violation of the EIA Notification, 2006 and amendment issued. EC for 13.0 MTPA was granted as per EIA Notification, 2006 and subsequent amendments/circulars.

(xxix) The project involves 1298 project affected families. R&R of the PAPs is being done as per Orissa Rehabilitation and Resettlement Policy 2006. The R&R of all the villages falling in this project area are being carried out under the direction of "Claims Commission" appointed by Hon'ble Supreme Court of India.

(xxx) Total cost of the project is Rs. 1482.24 Crs. Cost of production is Rs. 359 per tonne, CSR cost is Rs. 2 per tonne or 2% of the average net profit of the Company of the three immediately preceding financial years whichever is higher, R&R cost is Rs. 146.07 Crs. Environment Management Cost is Rs. 29.88 Crores.

4. The Expert Appraisal Committee (EAC) in its 25th EAC meeting held during 18-20 January, 2022, has recommended the project for grant of Environment Clearance (EC). Based on recommendations of the EAC, Ministry of Environment, Forest and Climate Change hereby accords approval for Environment Clearance (EC) to Expansion under O.M. dated 15.09.2017 for 20 % (stage-1) of Expansion of Garjanbahal OC mine for increase in production capacity from 13.0 MTPA to 15.6 MTPA (Peak) in mine lease area of 653.83 ha of M/s Mahanadi Coalfields Limited located at Villages Garjanbahal, Balinga, Karlikachhar, Bankibahal, Bangurkela, Tumulia. Tehsil Hemgir, District Sundargarh (Odisha) under 7 (ii) clause of EIA Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions in addition to the standard environmental conditions notified by the Ministry for environment safeguards as under:-

- (i) PP shall obtain CTO for 15.6 MTPA from State Pollution Control Board.
- (ii) PP must comply with all the non-compliances or partially compliances as per the certified compliance report wrt all the EC conditions stipulated in J-11015/159/ 2015.IA.II(M) dated 09.11.2017
- (iii) Further expansion in capacity will only be considered by EAC when at least 75% of EC conditions are complied fully and PP to obtain 5-star rating from Ministry of Coal as per their guidelines.
- (iv) PP shall implement in-pit conveyor system with silo loading facility till railway siding and No road transportation shall be allowed after December, 2022 and accordingly, SPCB shall not grant CTO for road transportation after December, 2022.
- (v) PP shall conduct carrying capacity assessment study within 1 year and submit to Ministry's IRO and further recommendation shall be complied with strict timeline.
- (vi) PP shall engage third party independent expert agency for monitoring/auditing of compliance of EC conditions every year.
- (vii) PP shall engage dedicated agency for plantation in mine site by April, 2022 instead of depending on State Forest Department. PP may seek inputs and expertise from forest department
- (viii) PP should not transport coal through road passing through any village and further ensure that its consumers of coal are also not using village road and passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.

- (ix) PP shall obtain No Objection Certificate (NOC) for extraction of Ground Water from Central Ground Water Authority for expansion capacity.
- (x) PP shall implement all listed activities which includes Fixed type sprinklers, trolley mounted and mobile fog cannons of 100 mtrs and 40 mts throw, wind barrier at coal stockyard, plantation etc with different timeline till December, 2022 at a cost of Rs. 14.73 Crores. The numbers of fog cannons shall be increased to 10 (atleast) and commenced within one year of this EC letter.
- (xi) PP shall implement proposed plantation for next three years as 7.50 Ha (2022-2023), 5 ha (2023-2024), 5 ha (2024-2025) at overall cost of Rs. 7.80 Crores and further plant 150,000 nos. of native trees with broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.
- (xii) PP shall commence Rapid loading system with conveyor belt system by December, 2022 and no road transportation shall be carried out by road towards Sardega siding after December, 2022.
- (xiii) PP shall deploy only 40-50 tonnes covered trucks/dumper to reduce fleet size till Rapid loading system and conveyor belt system is commenced (i.e. till December, 2022).
- (xiv) PP shall develop the pond present near the OB dump and develop aquatic life within 2 years and provide access to villagers as recreational place.
- (xv) PP shall prepare Basundhara River conservation plan with respect to its quality check, beatification, plantation along the boundary and construction of over bridge if required and collaborate with state government in river rejuvenation plan.
- (xvi) PP shall conduct substantial numbers of tree plantation in the villages of Kushra, Siarmal, Himgir, Kathapall for dust mitigation measures within 2 years and mark it for certification of Ministry's IRO.
- (xvii) PP shall implement Peripheral tree plantation along the mine lease area with miyawaki method of 50 mts width within 2 years through independent expert
- (xviii) PP shall explore an action plan for implementation of sand segregation plant to extract sand and aggregate (since quantity of OB is higher) to reduce agricultural land degradation
- (xix) PP also to provide drinking water facilities like installation of RO with proper water supply pipe fittings to nearby rural areas and also to install hand pumps by seeking consent from panchayat of the villages located within the study area of 10 km radius buffer zone within two years
- (xx) PP to install solar lights within 1 year from the grant of this EC along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year
- (xxi) PP to provide sanitation facility like bio toilets to the villages located within the study areas within 1 year from the grant of this EC
- (xxii) PP to install 1 more continuous ambient air quality monitoring stations at suitable locations

preferably village side and with consultation of SPCB. The real time data so generated shall be uploaded on company website. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.

- (xxiii) PP shall construct new multispecialty (100 beds) hospital in the 10 km of the project area within 2 years for local people out of approved budget.
- (xxiv) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.
- (xxv) Project proponent shall supply clean drinking water and for domestic purpose for the people coming under the zone of influence of this mining activity.
- (xxvi) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.
- (xxvii) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.
- (xxviii) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours
- (xxix) PP shall implement rain water harvesting mechanism in order recharge the ground water or as water conservation measure in addition to the proposed structure. PP shall carry out regular monitoring of Ground water level and quality.
- (xxx) PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms
- (xxxi) Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a 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.

4.1 The grant of Environment Clearance (EC) is further subject to compliance of the Standard EC conditions as under:

(a) Statutory compliance

Expansion of Garjanbahal Opencast Mine M/s Mahanadi Coalfield Ltd

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- (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.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).
- (iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.

(b) Air quality monitoring and preservation

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- (iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM₁₀/PM_{2.5}) 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.

- (iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.
- (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.
- (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.
- (vii) Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environment friendly sustainable technology should be implemented for mitigating such parameters.

(c) Water quality monitoring and preservation

- (i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
- (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-IA.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.
- (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.
- (iv) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.

- (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.
- (vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. 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.
- (vii) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
- (viii) 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.
- (ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development *etc.* The drains shall be regularly desilted particularly after monsoon and maintained properly.
- (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.
- (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.

(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 conducted. Progress in usage of such accessories to be monitored.
- (ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
- (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.

(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.
- (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).
- (iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
- (iv) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

(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).
- (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 top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- (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.

- (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in 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.
- (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.

(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.
- (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.

(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.
- (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.

- (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.
- (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.
- (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'.

(i) Corporate Environment Responsibility

- (i) 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.
- (iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- (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.
- (v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

(j) Miscellaneous

- (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be

in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.

- (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.
- (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.
- (iv) The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- (vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
- (vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- (viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- (ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (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.
- (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.
- (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.

- (xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- (xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- (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.
- (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) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules made their under and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report as well as during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented by the EC in letter and spirit.
6. **The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project.** The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
7. Any appeal against this Environment Clearance (EC) shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
8. The coal company/project proponent shall be liable to pay the compensation against illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others.
9. The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble Supreme Court.
10. This Environment Clearance (EC) shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.

11. All the conditions stipulated in Environment Clearance vide Ministry's letter no. J-11015/159/2015.IA. II(M) dated 09.11.2017 shall also be complied.

This issues with the approval of the competent Authority



(Lalit Bokolia)

Director

Copy to: -

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The APPCF, Regional office (EZ), Ministry of Environment, Forest and Climate Change, A-31, Chandrashekhapur, Bhubaneswar-751023 (Odisha)
3. The Secretary, Department of Environment & Forests, Government of Orissa, Secretariat Bhubaneswar (Odisha)
4. The Chairman, Central Ground Water Board (CGWB), Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
6. The Chairman, Orissa State Pollution Control Board, Parivesh Bhawan, A/118 Nilkanthnagar, Unit VIII, Bhubaneswar-751012 (Odisha)
7. The District Collector, Sundargarh, Government of Odisha
8. Monitoring File /Record File
9. PARIVESH Portal



(Lalit Bokolia)

Director