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OFFICE OF THE
STATE POLLUTION CONTROL BOARD, ODISHA

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

BY REGD POST

No. 16143 / 1

IND-II-NOC-6213

Date 14-12-2017

OFFICE MEMORANDUM

In consideration of the online application no. **726418** for obtaining Consent to Establish for **Garjanabahal OCP of M/s Mahanadi Coalfields Ltd.**, the State Pollution Control Board is pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for production of Coal of quantity **10.00 MTPA (Normal)** and **13.00 MTPA (Peak)** over an area of **795.38 ha.** (as per land requirement breakup enclosed as Annexure - I), At- **Garjanbahal, Basundhara, Siarmal Area** in the district of **Sundargarh** with the following conditions.

GENERAL CONDITIONS:

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

SPECIAL CONDITIONS:

A. GENERAL CONDITIONS:

1. The proponent shall obtain environmental clearance as per EIA Notification, 2006 and amendment thereafter before commencement of mining activity.
2. The proponent shall obtain forest clearance under Forest (Conservation) Act, 1980 for forest land involve in the mining lease area.
3. The proponent shall obtain permission from Department of Water Resources, Govt. of Odisha for drawl of water for domestic purpose.



4. The mine should not store for more than seven days of coal production to avoid coal fire in stock yard as well as coal seam. The mine shall take adequate preventive measures for spontaneous fire in the coal seam as well as stock yard and an action plan regarding this shall be submitted at the time of consent to operate application.
4. The method of mining shall be opencast mining by shovel-dumper in overburden and surface miner, loader and tipper in coal. No change in mining technology and scope of working shall be made without prior approval of the Board.
5. **A green belt of adequate width and density preferably with local species along the periphery of the mine, inactive dumps, backfilled area, vacant area, colony and any other vacant area shall be raised so as to provide protection against particulates and noise to ameliorate the environment. A detailed plantation programme in this regard shall be prepared and submitted at the time of making application for consent to operate for assessment.**
6. Adequate measures shall be taken for control of noise levels below 85 dB (A) in the work environment.
7. Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.
8. A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the organization.
9. The Board may impose further condition or modify the conditions stipulated in this order during installation, and / or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented and / or any information suppressed in the application form.
10. The conditions as stipulated in this consent to establish order will 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 and the Public Liability Insurance Act, 1991 along with their amendments and rules.
11. The project shall use fly ash bricks and other building materials made out of fly ash for construction of township.
12. The proponent shall install solar powered lighting and heating system whenever possible in township.

B. WATER POLLUTION:

13. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the hourly peak rain fall and maximum discharge in the area adjoining the mine site. Sump capacity should have adequate retention period to allow proper settling of silt material



14. Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data. The detail specification shall be worked out and submitted to the Board.
15. Catch drains of appropriate size should be constructed to divert the run off from the OB dump to the siltation pond of appropriate size to arrest silt and sediment flows from soil, OB and mineral dumps. Similar arrangement shall be done around the coal stack pile area. The drains should be regularly desilted and maintained properly. Surface run-off from OB dump area, coal pile area, top soil storage area shall be routed through adequate settling pond (designed maximum hourly rain fall basis) to meet prescribed standard of SS-100 mg/l and Oil & Grease-10 mg/l before discharge into natural stream/water courses during monsoon.
16. Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), monsoon (August), Post – monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly.
17. The domestic wastewater generated from the township will be treated in sewage treatment plant. The treated water shall be reused for gardening and plantation and the surplus water if any shall be discharged to outside after meeting the following prescribed standards as notified by the MoEF&CC, Govt. of India vide G.S.R. 1265 (E), dated 13.10.2017.

Sl. No.	Parameters	Standards
1.	pH	6.5-9.0
2.	BOD(mg/l)	30
3.	TSS(mg/l)	<100
4.	Fecal Coliform (MPN/100ml)	< 1000

18. Oil and grease trap shall be installed before discharge of effluent from workshop. Wastewater from the mine pit, check dams or any other discharge leaving lease boundary of the mine should be properly collected, treated so as to conform the following standard i.e. pH = 5.5 – 9.0, SS = 100 mg/l, COD = 250 mg/l & Oil & Grease = 10 mg/l.
19. Rain water harvesting practice shall be followed by utilizing the rain water collected from the roof of the buildings for recharging of ground water within the premises and other large structures as per the concept and practices prescribed by CPCB, New Delhi and details of which is available in the web site.

C. AIR POLLUTION:

20. High efficiency bag filters shall be installed at crushers of the Coal Handling Plant. Water sprinkling systems shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points etc. Provision of movable chutes shall be made during loading at CHP to avoid free fall of coal.
21. Water sprinkling shall be carried out on unplanted surface of OB dump to control fugitive emission.



22. Drilling shall be avoided to the maximum possible extent. However, drill should be wet operated or with dust extractors and controlled blasting should be practiced.
23. The mine shall provide water or water mixed chemicals for dust suppression at all strategic points such as coal stack yards, loading and unloading points, all transfer points, conveyors etc. to suppress dust fine atomizer nozzles arrangement shall be provided on the coal heaps and on land around the crusher / pulverizes. As far as possible conveyors and transfer points etc. shall be provided with enclosures.
24. **Four (4) ambient air quality monitoring stations** for 24 hours operation should be established in the core zone as well as in the buffer zone for PM_{10} , $PM_{2.5}$, SO_2 , NO_x , and CO monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.
25. Data on ambient air quality (PM_{10} , $PM_{2.5}$, SO_2 , NO_x and CO) shall be regularly submitted to the State Pollution Control Board once in six months.
26. The mine shall comply the following standard at the loading or unloading, haul road, coal transportation road, coal handling plant (CHP), railway siding, blasting, drilling, overburden dumps or any other dust generating external sources as per the Rule 2(1) of the Environmental Amendment Rules, 2000 notified vide notification G.S.R. 742 (E), dated 25.09.2000.

Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4
SPM	Annual Average* 24 hours**	360 $\mu\text{g}/\text{m}^3$ 500 $\mu\text{g}/\text{m}^3$	High volume sampling (Average flow rate not less than 1.1m ³ /min)
RPM(size less than 10 μm)	Annual Average* 24 hours**	180 $\mu\text{g}/\text{m}^3$ 250 $\mu\text{g}/\text{m}^3$	Respirable Particulate matter sampling and analysis
SO_2	Annual Average* 24 hours**	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	Improved west and Gaeke method Ultraviolet fluorescense
NO_2	Annual Average* 24 hours**	80 $\mu\text{g}/\text{m}^3$ 120 $\mu\text{g}/\text{m}^3$	Jacob & Hochheiser Modified (Na-Arsenic) Method Gas phase Chemiluminescence

(*Annual Arithmetic mean for the measurements taken in a year, following the guidelines for frequency of sampling laid down in clause-2.

**24 hourly/ 8 hourly values shall be met 92% of the time in a year. However, 80% of the time may exceed but not on two consecutive days.)

27. The haul roads and arterial roads shall be made black topped / concrete with avenue plantation.

D. SOLID WASTE:

28. Intermediate storage area for Municipal Solid Waste (MSW) shall be developed inside the premises of township before handing over the MSW to the concerned ULBs for final disposal




29. The proponent shall segregate organic waste from the MSW of township and segregated organic waste shall be converted to manure through organic waste converter. The proponent shall store the organic waste in closed shed inside the township before use the same in organic waste converter.
30. All required sanitary and hygienic measures should be in place before starting construction activities of township and to be maintained throughout the construction phase.
31. All the top soil excavated during construction activities of township should be stored for use in horticulture / landscape development within the project site.
32. Disposal of muck during construction phase of township should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
33. The proponent shall comply the provisions of Construction & Demolition Waste Management Rules, 2016.
34. Construction spoils of township, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.
35. The Project proponent shall dispose off hazardous waste materials such as tarry products, lead containing products, paints & pigments residues, broken fluorescent and mercury lamps during construction and operational phase as per Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 as amended from time to time
36. Municipal solid waste generated from the township shall be disposed off as per Solid Waste Management Rules, 2016.
37. Top soil of mining area shall be stacked separately with proper slope at earmarked site (s) with adequate measures and shall be used for reclamation and rehabilitation of mined out areas.
38. **Back filling of abandoned pit shall be carried out as per approved mining plan. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status in this regard shall be submitted to the Board on yearly basis.** The mine shall explore the possibility for back filling of mine voids by fly ash generation from nearby thermal power plant.

Encl: Annexure - I


MEMBER SECRETARY

To


The Project Officer,
Garjanbahal Open Cast Project of M/s MCL,
Garjanbahal, Basundhara, Siarmal Area,
Dist-Sundargarh, Odisha -770076



Memo No. 16144 /Dt. 14-12-2017

Copy forwarded to:

1. The Secretary Steels & Mines, Govt. of Odisha, Bhubaneswar
2. The Collector and District Magistrate, **Sundargarh**.
3. The Director, Directorate of Mines, Govt. of Odisha, Bhubaneswar
4. The Regional Officer, SPC Board, **Jharsuguda**.
5. The DFO, **Sundargarh**.
6. Copy to HSM Cell, SPC Board, Bhubaneswar
7. Consent to operate section, SPC Board, Bhubaneswar.
8. Copy to Guard file.


SR. ENV. SCIENTIST, L1(N)



ANNEXURE-I

Land Requirement Break-up for Garjanabahal OCP of M/s Mahanadi Coalfields Ltd

Sl. No.	Particulars	Total Area in ha		
		Forest	Non-forest	Total
1	Quarry excavation area	68.16	321.66	389.82
2	Safety zone (7.5m around excavation boundary of the forest land)	1.66	3.51	5.17
3	Blasting danger zone (excluding the part of OB dump) (7.5 m safety zone to either block boundary or 300m from mine boundary)	3.86	132.98	136.84
4	External OB dump	1.87	60.71	62.58
5	Infrastructure (CHP, Washery, Silo point, laying of railway lines for dispatch point)	13.35	36.31	49.66
6	Rationalisation of project boundary		9.76	9.76
	Total mining area required for operating Garjanabahal OCP	88.90	564.93	653.83
B.	Outside Mine Lease Area			
1.	Other infrastructure	---	40.00	40.00
2.	Resettlement	---	68.50	68.50
3.	Residential colony	---	33.05	33.05
	Total Outside Mine Lease Area	---	141.55	141.55
	Total Project area	88.90	706.48	795.38


SR. ENV. SCIENTIST, L-I (N)