

PRADHAN INDUSTRIES

BANDHAMANDI GRAPHITE MINE & BENEFICIATION PLANT

Environmental Clearance [F. No. J-11015/27/2011.IA-II(M)]

Stipulated Conditions & Compliance

1st December 2019

Sl. No.	Conditions by MoEF&CC	COMPLIANCE BY PROJECT PROPONENT (PREVIOUS)
A. SPECIFIC CONDITIONS :		
1	Occupational health and safety measures for the workers including identification of work related health hazards, and health effects on exposure to mineral dust etc., shall be carried out. The Proponent shall engage a full time qualified occupational health doctor with an Occupational Health Centre established in the mine, who will carry out periodic monitoring for exposure to respirable mineral dust on the workers and health records of workers be maintained. Regular Awareness programme for workers as well as local people on impact of mining on their health, training on malaria eradication, HIV, water conservation and quality sanitation and use of personal protective equipments etc., shall be carried out periodically. The impact of implementaiton of various health measures at an interval of five years or less shall be assessed and follow up measures taken.	The Project Proponent has been conducting Occupational health Checkup periodically in regular intervals, the last health checkup being made on 20.04.2019 by a Registered Occupational Health Consultant. PHC at Sikarpai, which is close-by, is taking care of the medical needs of the local people as and when needed. The Project Proponent has kept a dedicated Vehicle at the plant site for emergency need. One Pharamacist and One qualified MBBS Doctor have also been engaged to look after the health and medical issues of the workers. In addition health awareness programe on General Hygenic Issues and on Safety precautions have been conducted.
2	The project proponent shall obtain Consent to Establish and Consent to Operate from the Odisha State Pollution Conrol Board and effectively implement all the conditions stipulated therein.	The Project Proponent has already obtained Consent to Establish vide letter No.: 1255, Dtd. 28.05.2012 and Consent to Operate vide Order No.: 2627, Letter No.: 830, Dtd. 30.03.2019, Valid upto 31.03.2021.
3	The project proponent shall ensure that no natrual water course and / or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the 1st and 2nd order streams, emanating or passing through the mine lease during the course of mining operation.	Agreed

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4	The top soil, if any shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.	Agreed. The generated top soil have been dumped at the earmarked top soil stack site and therefore it has not affected any mining operation. The slopes of the dump has been maintained below 28 ⁰ and due care has been taken to ensure that the dumped top soil has not been eroded due to rain, periodical water spraying is done on the top soil to prevent spreading out of dust. The Garland drain have been refurbished.
5	Appropriate safeguard measures shall be taken to ensure stability and drainage of dump so that no solid waste / debris flows into the nallah.	The Garland drain have been renovated and strengthened. Catch Drains have been constructed intermittantly to arrest any soild waste / debries to flow into the outside nala. Plantation has been done during last rainy season in order to stabilized the dump and to arrest dump erosions.
6	The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not kept active for a long period of time and their phase - wise stabilization shall be carried out. Proper terracing of OB dumps(s) shall be carried out so that the overall slope shall not exceed 28 ⁰ . The over burden dump(s) shall be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dumps. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self - sustaining. Compliances status should be submitted to the Ministry of Environment, Forest & Climate Change and its Regional Office, Bhubaneswar on six monthly basis.	OB dumps have been developed in accordance with the instructions. Proper terracing and plantation have been taken up in order to stabilize the OB dump.
7	Catch drains and siltation ponds of appropriate size shall be constructed for the working pit, temporary OB and mineral dumps to arrest flow of silt and sediment directly into the adjoining River and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after the monsoon and maintained properly.	Catch drains around the working pit, OB, mineral stack etc., are connected to a series of Settling ponds and it also consists of siltation pits in order to separate the silts on the way to the settling ponds. Hence, such water is not discharged to any external river or water bodies. After settling, the water is taken to a clean water pond where the water is pumped back for use in the plant after maintaining proper pH and for other uses in the lease hold areas.

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8	Dimension of the retaining wall at the toe of the OB dump(s) and the OB benches within the mine to check run-off and siltation should be based on the rain fall data.	Agreed. Random Rubble Masonary has been carefully & appropriately designed for Toe & Retaintion Wall in conformity with Mining Scheme after analysing past rain fall data etc.
9	Plantation shall be raised in an specified area including a 7.5 m wide green belt in the safety zone around the mining lease, DB dumps(s), along the roads, etc., by planting the native species in consultation with the local DFO / Agriculture Department. In addition, plantaiton shall also be raised in the backfilled and reclaimed area and around water body. The density of the trees should be around 2500 plants per ha. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.	After reopening of Mine, 450 No. of plants have been planted. Further in the last rainy season 1510 Nos. of Plants have been planted in the safety zone, along the roads etc.
10	Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Agreed. There being no crushing or screening plant, the levels of particulate matter are comparatively low. Extensive water sprinkling are being carried out regularly on haul roads through a manual sprinklers. Due care has been taken to minimize particulate matter at loading and unloading points. AAQ parameters are being monitored regularly. The monitoring report for June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.
11	Regular monitoring of water quality upstream and downstream of perennial nallahs falling in the impact zone shall be carried out and record of monitonring data should be maintained and submitted to Ministry of Enviornment, Forest & Climate Change, its Regional Office, Bhubaneswar, Central Ground water Authority, Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board.	Agreed. Regular monitoring of water quality from Dalkona Nala at Panasagurha (up stream & Down Stream), Uagarh Nadi near Bandhamandi upstream and from Settling pond have been monitored regularly and the monitoring report for June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.

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12	Appropriate measures shall be taken for treatment of the upper catchment of the mine lease area.	A scheme for Gap Planting and soil and moisture conservation activities to restock and rejuvenate the degraded open forests (Having crown density less than 0.4) has been prepared and approved by Regional Chief Conservator of Forest, Koraput vide his memo No. 2106/1F(Project)67/2016, Dtd. 02-06-2016. Another Scheme for Planting over 1 & 1/2 of Safety Zone has been designed to check water flow in the upper catchment of Mine / nalla. The same has been approved by the RCCF, Koraput vide his letter mentioned above. The Management is taking steps to implement the scheme.
13	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Agreed. Site has been selected in the plant area for the re-charge structure to channelize the roof top rain water. Steps are undertaken to provide pipes to collect the roof top water and closed channels to guide the same to the recharge structure. Moreover, in order to increase waterholding capacity and increase percolation, de-silting of village tanks / pond has been done in nearby Bandhamandi Village.
14	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year - pre-monsoon(April-May), monsoon (August), post monsoon (November) and winter (January); once each season)] shall be carried out in consultation with the State Ground Water Board / Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment, Forest & Climate Change and its Regional Office, Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.	Agreed and noted for guidance. Regular monitoring of Ground Water level in and around mining lease are being carried out as per normal practice and regular reports submitted to appropriate authorities in the past. Ground water level and quality are being monitored at Bandhamandi, Bhitardarba, Panasagurha, Birda, Baligurah & near project site. The Seasonal Monitoring report for June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.
15	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water, required for the project.	Agreed and earlier complied

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16	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	Rain Water Harvesting Scheme as submitted to CGWA is under implmentation and the Rain Water Harvesting Pond has been constructed accordingly.
17	Appropriate mitigative measures should be taken to prevent pollution of nearby River in consultation with the State Pollution Control Board.	Agreed and noted for guidance. The mine & plant is working under "Zero Water Discharge Concept" in which no process water is discharged to near by nallah. This ensures elimination of Pollution / Contamination of near by rivers and water bodies. Periodical monitoring of surface water is being taken up through accredited Consultant. The Seasonal Monitoring data on surface water from June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.
18	Vehicular emissions shall be kept under control and regularly monitored Measures shall be taken for maintenance of vehicles used in mining operations and in transporation of mineral. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the minerals shall be overloaded.	Agreed and noted for guidance. Eight Heavy vehicles / machineries have been deployed in the mining activities in working season. Vehicle emission have been tested as per standard pollution norms. All vehicles found within the norms. In addition LMV and one heavy motor vehicle have been engaged for activities outside the mine. The emission standard is within the proximate standards by pollution control board.
19	Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.	There is no provision of blasting during mining activities.
20	Drills shall either be operated with dust extractors or equipped with water injection system.	There is no provision for blasting and drilling.
21	Mineral handling area shall be provided with the adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Agreed and noted for guidance. Normally the excavated minerals are moist and hence, generation of fugitive dust is minimal. In the Plant site, the process being a complete wet process the emission of dust is minimal. However, the pulversering section has adequate dust collector / bag filters arrangement to minimize the fugutive dust.

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22	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.	Agreed and noted for guidance. The Staff Colony which is small and located outside lease hold area the sewage is being managed by introducing them to Septing Tank - Soakpit method. In the mineral, effluents like Diesel / Pine Oil is being treated in stage-wise manner which is inbuilt to the system. We have inbuilt Effluent Treatment Section which includes a series of settling tank, filtration tank, treatment and recirculation tank, ensuring Zero Discharge system.
23	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Agreed. Periodical medical examination has been conducted on 20.04.2019.
24	Regular monitoring of free silica in the dust will be carried out and records maintained. It shall be ensured that the levels of silica do not exceed the prescribed limit. The workers will be provided with personal protective measures to guard against inhaling silica dust.	Agreed. The seasonal data for the Period from June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.
25	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structure to be removed after the completion of the project.	All Labourers are from Local areas. Hence, no workers stay within the plant / mines lease area after their shift duty. However, Canteen, Toilets, Safe Drinking water Facilities are provided within the premises for workers well being.
26	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered flora as well as endangered fauna spotted in the study area. Action plan for conservation of flora and fauna shall be implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be including in the project cost. copy of action plan may be submitted to Ministry and its Regional office at Bhubaneswar within 3 months.	The PP has already prepared site specific Wildlife Conservation & Protection Plan taking into account the local endangered flora & fauna in the study area. The Scheme has been approved by PCCF (WL) & Chief Wildlife Warden, Orissa, Bhubaneswar vide memo No.: 3110, Dtd. 05.05.2011. The required approved amount has been deposited in concerned CAMPA fund account.

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27	The critical parameters such as RSPM (Particulate matter with size less than 10 micron i.e., PM ₁₀) and NOX in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closer shall be monitored periodically. further, quality of discharged water shall also be monitored [(TDS, DO, PH and TotalSuspended Solids(TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on the display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) datd 27.05.2009 issued by Ministry of Environment, Forest & Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	Agreed and noted for guidance. The seasonal monitoring report from June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.
28	A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Enviornment, Forest & Climate Change 5 years in advance of final mine closure for approval.	Agreed and noted for guidance.
29	The project proponent shall undertake all the commitments made during the public hearing and effectively address the concerns raised by the locals in the public hearing as well as during consideration of the project, while implementing the project.	Agreed and noted for guidance. The PP has already implmented the following commitments made during public hearing. (1) A tube well has already been dug at Bandhamandi Village. (2) A Pharamacist has been appointed (3) A vehicle has been kept at plant site & etc., other commitments are being taken up in due course.
B. GENERAL CONDITIONS		
1	No Change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest & Climate Change.	Agreed and noted for guidance.
2	No change in the calendar plan including excavation, quantum of mineral graphite and waste should be made.	Agreed and noted for guidance. The calendar plan including excavation, quantum of mineral graphite and waste were projected as per the approved Mining Scheme.

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3	<p>Four ambient air quality - monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM₁₀) and NOX monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive tracts and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.</p>	<p>Agreed. Four ambient air quality stations at : Mine Office, Mine Face, Dump Site & Plant Site (Core Zone) and another four monitoring stations at Bandhamandi Village, Kachama Village, Podeng Village & Bartibali Village (Buffer Zone) have been established.</p>
4	<p>Data on ambient air quality RSPM (Particulate matter with size less than 10 micron i.e., PM₁₀) & NOX should be regularly submitted to the Ministry of Environment, Forest & Climate Change including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.</p>	<p>Agreed and noted for guidance. The seasonal monitoring report from June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.</p>
5	<p>Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.</p>	<p>Agreed. A manual sprinkler has been engaged to suppress dust at critical areas / haul road / transfer points. AAQ parameters are being monitored regularly. The monitoring report for June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.</p>
6	<p>Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc., should be provided with ear plugs / muffs.</p>	<p>Agreed and implemented.</p>
7	<p>Industrial Waste Water (Workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.</p>	<p>Agreed and noted for guidance. The mine & plant is working under "Zero Water Discharge Concept" in which no process water will be discharged to near by nallah. In the mineral, effluents like Diesel / Pine Oil is being treated in stage-wise manner, which is in-built to the system and the quantity so applied do not pose any adverse effect.</p>
8	<p>Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.</p>	<p>Agreed and noted for guidance. Workers working in the dusty areas were provided with protective respiratory devices with adequate training imparted to them from time to time. Similarly, Occupational health checkups have been undertaken periodically to observe if there is any adverse health effects.</p>

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9	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.	Agreed and noted for guidance. The Management has already formed EMC.
10	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment, Forest & Climate Change and its Regional Office located at Bhubaneswar.	Agreed.
11	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	Agreed. The financial closure has been obtained and the regional office OSPCB after due verification have given final approval via CTO for commencement of mining activity.
12	The Regional Office of this Ministry located at Bhubaneswar 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.	Agreed and implemented.
13	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment, Forest & Climate Change, its Regional office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment, Forest & climate Change, Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board.	Agreed. We have been submitting half yearly compliance reports regularly, the last compliance report being submitted vide our letter No. 21, Dtd. 30.05.2019. The seasonal monitoring report from June-2019 to August-2019 & September 2019 to November 2019 is enclosed at Annexure - 1. All parameters are found to be within CPCB norms.

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14	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Earlier complied.
15	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and the Collector's office / Tehsildar's office for 30 days.	Earlier complied.
16	The environmental statement for each financial year ending 31st March in Form - V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment, Forest & climate Change, Bhubaneswar by e-mail.	Agreed and noted for guidance. Environmental Statement had been regularly submitted by the Project Proponent to the Authority and the said Statement for the Financial Year 2018-19 was submitted vide letter No 19, Dated 24.05.2019 enclosed as Annexure - 2.
17	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issues of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at Website of the Ministry of Environment, Forest & Climate Change at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Earlier complied.