



WESTERN COALFIELDS LIMITED



SIX MONTHLY EC COMPLIANCE REPORT OF

TAWA-II UNDERGROUND COAL MINE EXPANSION PROJECT

WCL, PATHAKHERA AREA

(EC CAPACITY – 0.60 MTPA IN LAND AREA OF 520.0 HA)

(EC VIDE LETTER NO. - J-11015/53/2006-IA-II(M) dated
15.01.2021 & 02.08.2006)

(FOR THE PERIOD : 01/10/2022 to 31/03/2023)

Western Coalfields Limited

COMPLIANCE OF ENVIROMENTAL CLEARANCE CONDITIONS
NAME OF PROJECT – TAWA-II UNDERGROUND COAL MINE EXPANSION
MOEF&CC CLEARANCE LETTER No IA-J-11015/53/2006-IA-II(M)
Dated 15th January, 2021

A. Specific Conditions:

S. No.	Condition	Compliance
i.	All the conditions stipulated by the MPPCB in their NOC shall be effectively implemented	Condition complied. Condition complied. The conditions stipulated by MPPCB in their NOC have been duly complied and the Consents Compliance reports have been submitted to MPPCB through XgN portal on Regular interval. (Copy of the latest Consent Compliance Report enclosed herewith for ready reference as ANNEXURE-III)
ii.	No mining shall be undertaken in lease area falling in forest land for which forestry clearance has not been obtained under the provision of the forest conservation act –1980.	<p>Complied.</p> <p>No mining has been carried out the land area falling in forest area.</p> <p>As per the EC, total forest land involved in the project is as mentioned below for which Forestry clearance has been secured:</p> <ul style="list-style-type: none"> • Forestry Clearance obtained for 195.20 Ha vide letter No. 8/97/97/FC dated 22.1.1999 (including 12.708 Ha. Surface Rights) • Stage – I Forestry Clearance has been obtained vide letter No.: 8-52/2017-FC dated 14/05/18 for remaining 201.079 Ha (Mining Rights) • 3.75 Ha of Forest Land has been diverted vide letter No. : 6MPB/09/2006/BHO/3741 dt.06/08/2007 for erecting 33 kV power line, which has been acquired under surface rights.
iii.	Regular monitoring of subsidence movement on the surface over and around the working and impact on natural drainage pattern, water bodies, vegetation, structure, roads and surroundings should be continued till movement ceases completely. In case of observation of any high rate of subsidence movement appropriate effective corrective measure should be taken to avoid loss of life and material. Cracks should be effectively plugged with ballast and clayey soil/	<p>Complied.</p> <p>Subsidence monitoring is being carried out on regular basis by the Highly skilled Team of DGMS Approved Survey Personnel. Copy of the latest Subsidence monitoring Plan & Subsidence Monitoring Pillars enclosed herewith for ready reference as Annexure-12. The cracks observed on the of surface has been duly plugging with ballast / clayey soil, etc</p>

	suitable materials.	
iv.	Garland drain (size, gradient and length) around the safety areas such as mines shaft and low lying area and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sides. Sump capacity should also provided adequate retention period to all proper settling of silt material.	<p>Condition duly complied.</p> <p>Garland drains have been constructed in the mine premises near Coal Stock Yard. The Size of Garland drain are as follow: Length - 150.0 m , Width - 0.80 m & Depth - 0.60 m</p> <p>Regular cleaning of the garland drain has been carried out with departmental resources on a quarterly basis. Total 15 Man shifts have been consumed in the cleaning of Garland drain during October 2022 to March 2023</p>
v.	Crush/ Crushers at the CHP should be operated with high efficiency bag filter, water sprinkling system should be provided to check fugitive emission from crushing operation, conveyor system, haulage road, transfer points etc	<p>Condition complied.</p> <p>The existing CHP facility is only used for storage of coal coming out from underground belt conveyor There is No Coal Crushing arrangement available in the CHP of Tawa – II UG Mine.</p> <p>Water spraying arrangement is in operation at all transfer points along the conveyor system as well as in the bunker.</p> <p>To control the fugitive emission Sprinkler & Rain guns have been installed along the coal stock Yard, near Internal Coal Transportation Road, Near Way bridge and Coal Bunker for dust suppression purpose.</p>
vi.	Drill should be wet operated only.	<p>Complied.</p> <p>In Tawa-II UG expansion project, coal is being extracted with underground mining technology. Underground mining has low impact on environment in comparison to opencast coal mining. The drilling, blasting, removal of huge amount of overburden is not required in underground mines. The major sources of pollution are eliminated in underground mining.</p> <p>Hydraulically operated roof bolters are used water for flushing out the cuttings from the drill holes. This automatically suppresses the dust and also increases life of the drill rods and drill bits.</p>
vii.	Control blasting should be practiced with use of delay detonators. The Mitigative measures for control of ground vibration and to arrest the fly rocks and boulder should be implemented	<p>Complied.</p> <p>In Tawa-II UG expansion project, coal is being extracted with underground mining technology. Underground mining has low impact on environment in comparison to</p>

		<p>opencast coal mining. The drilling, blasting, removal of huge amount of overburden is not required in underground mines. The major sources of pollution are eliminated in underground mining.</p> <p>The underground mine is considered as sustainable method for coal extraction. It does not require making long term changes in the land due to excavation of overburden. As such, there is not any blasting over the surface. Entire operations are carried out below ground.</p> <p>The land at surface is not disturbed except minor disturbances due to subsidence.</p>
viii.	<p>A progressive Afforestation plan shall be prepared and implemented for the undisturbed area. Area under green belt development, areas along road, infrastructure, along M.L. boundary and township out side the lease areas etc. by planting native species in consultation with the local DFO/Agriculture department. The density of the trees should be around 2500 plants per hectare.</p>	<p>Complied</p> <p>In general, Pathakhera area has plenty of natural vegetation, plants and trees. However, Plantation has been carried out on the vacant land.</p> <p>Since 1995-96, nearly 2,36,910 Nos of trees have been planted in around 94.70 Ha area of Pathakhera area and a total of 9300 Nos of trees have been distributed until 31.02.2023.</p> <p>Plantation of 2200 No. of Plants has been carried out on vacant land near Pathakhera Township. The density of the trees has been maintained around 2500 plants per hectare. (i.e. 2200 trees planted in 8800 sq. meter land with spacing of 2 meter)</p> <p>Nearly 135 Nos. of trees have been planted in Tawa-II UG mine premises and around 800 plants have been distributed.</p> <p>Plantation in UG Mine is carried out only over the All right & Surface Right area. The entire infrastructure set up is there in the area only. In between the vacant space, Plantation has already been done.</p> <p>The mine area is located in the midst of dense forests and hence, there is little scope for Afforestation or gap plantation and since the mine is an underground mine, natural forests of the area will have a negligible impact due to mining activity.</p>

ix.	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and construction of new peizo meters. The monitoring for quantity should be done four times a year in pre-monsoon (May) Monsoon (August), Post monsoon (November) and Winter(January) season and for quality in May. Data thus collected should be submitted to the MOEF and to CPCB quarterly within one month of monitoring.	Condition duly complied. Quarterly monitoring of ground water levels and annually ground water quality is being monitored through network of existing wells. All the parameters are well within permissible limit. Monitoring report is being regularly submitted to CGWB on annual basis. The well monitoring shows no depletion in ground water level. Copy of the report is also enclosed herewith for ready reference as Annexure - 1.
x.	The company shall put up artificial ground water recharge measure for augmentation of ground water resource. The project authority should meet water requirement of nearby village(s). In case the village well go dry due to dewatering of mines.	<p>Complied.</p> <p>To minimize the impact of mining on ground water system, Rain water harvesting System has been constructed at Rescue room premises, Bagdona Colony.</p> <p>In addition to that, Total 06 Nos of Hand Pump have been constructed in nearby villages by WCL to meet their water requirement.</p>
xi.	Sewage treatment plants should be installed in the existing colony. ETP should also be provided for work shop and CHP waste water.	<p>Condition complied. This is an operating Underground mine, no HEMM has been used in this mine hence No effluent has been generated in Unit Workshop. As only a small engineering workshop is present at mine to cater the day to day minor repairing kind of engineering services.</p> <p>Pathakhera Area is having common colony infrastructure for all Mines of Area.</p> <p>Each residential unit is provided with septic tank & soak pit arrangement to deal with domestic effluent, The sizes of the same varies from 25 users to 250 users. This is 02 stage Sewage treatment as per IS 2470 part I&II - 1985.</p> <p>The preliminary treatment is being given through septic tank and The secondary treatment is being given through soil absorption system. Hence, this is the standard practice and we are following the system. The arrangement does not allow any sewage to get mixed into any natural water course without treatment. There are 796 septic tanks in the centralized colonies of Pathakhera Area, which covers 5106 residential quarters of WCL, Pathakhera Area.</p> <p>Further, MoU has been signed between WCL & Sarni Nagar Palika to establish an</p>

		<p>In-situ Nallah Sewage Treatment System for 100 % treatment of Sewage of Pathakhera Township. Accordingly , Work has been awarded to CSIR-NEERI, Nagpur for Preparation of Pre feasibility report and Detailed Project Report for an In-situ Nallah Sewage Treatment System. Copy of the same is enclosed herewith for ready reference as Annexure -23.</p>
xii.	<p>Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from work force engaged in active mining operation shall be subjected to health check up for occupational diseases and hearing impairment, if any through an agency such as NIOH, Ahmedabad within a period of 1 year and the result reported to this ministry and to DGMS</p>	<p>Complied.</p> <p>Periodical health check up of Mine workers are carried out regularly with the purpose of detecting occupational diseases & hearing impairment.</p> <p>PP has set up of 60 bedded Area Hospital in Pathakhera Area with 08 qualified doctors catering to the medical needs of the employees and local populace.</p> <p>The following infrastructure is available in the area Hospital:</p> <ul style="list-style-type: none"> • Qualified Doctors • Qualified lab technicians • Spirometry instrument • ECG Machine • Audiometer • X ray Machine • Blood testing apparatus <p>The preventive measures / medicine for burns, malaria and provision of antisnake venom are ensured at Area Hospital.</p> <p>Periodical Medical Examination (PME) is carried out compulsorily for each employee once in three years up to the age of 50 Years and for those above 50 years is once in a years.</p> <p>Personnel working in dust areas have been provided with dust masks and ear plugs. In addition to that, Vocational training is being accorded to all mine workers (both department and contractual staff) on an annual basis.</p> <p>WCL is having occupational Health Committee at the corporate level as well as at the unit level for regular health status monitoring of all employees.</p>

		No person has been detected with coal miners pneumoconiosis during the last 5 years.
xiii.	Digital processing of the entire lease area using remote sensing technique should be done regularly once in 3 year for monitoring land used pattern and report submitted to MOEF and its Regional office at Bhopal.	Condition complied. Digital processing of the entire lease area using remote sensing technique has been carried out through CMPDIL. <u>Latest Report of March 2021 has been uploaded on Parivesh Portal along with Half yearly EC Compliance report.</u>
xiv.	A final Mine Closure plan along with details of Corps Fund should be submitted to the MOEF 5 year in advance of final mine closure for approval.	Condition Duly complied, A final Mine Closure plan along with details of Corps Fund have been sent to MOEF&CC vide letter no : WCL/PKD/TAWA – II / 2021 /880 Dated 17/06/2021
xv.	Consent to operate shall be obtained before starting mining operation.	Complied. Consent to operate has been obtained since inception.

B. General Conditions:

S. No.	Condition	Compliance
i.	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environmental and Forests.	Condition complied. No change in mining technology and scope of work has been made.
ii.	No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.	Condition Complied. No change in production has been made beyond approved EC capacity of 0.60 MTPA since beginning of Mine.
iii.	Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO ₂ and Nox monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board	Condition Complied. Four ambient air quality-monitoring stations have been established in the core zone as well as in buffer zone, i.e.: 1. Manager Officer Tawa-II U/G 2. SAM Office 3. MPEB Colony 4. Hirapalla / Bhagaikhapa Village. Perusal of the test reports reveal that all the monitored parameters are well within the stipulated standards. The stations have been fixed considering the meteorological data, topographical features etc. The Monitoring is carried out with due intimation to MPPCB. Monitoring data has been submitted to MoEF&CC & MPPCB regularly. The monitoring results for period of 01.09.2022 to 28.02.2023 enclosed as annexure - 9.
iv.	Data on ambient air quality (SPM, RPM, SO ₂ and Nox) should be regularly submitted to the Ministry including its Regional Office at	Condition Complied. Data on ambient air quality (SPM, RPM, SO ₂ and Nox) are being monitored and regularly

S. No.	Condition	Compliance
	Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months.	submitted to the MPPCB, CPCB & MOEF, Bhopal on regular basis through mail & also uploaded in Parivesh Portal along with Six monthly EC Compliance Reports.
v.	Fugitive dust emissions from all the source should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points should be provided and properly maintained.	<p>Condition complied. This is an underground mine. All the mining activities i.e. Drilling, Blasting, Loading, unloading, transportation of coal from district to surface has been carried out in the closed condition w.r.t. an open cast mine where all the activities are being carried out in exposed circumstances.</p> <p>Along with that, Following air Pollution control mechanism has been introduced:</p> <ol style="list-style-type: none"> 1. Spray points have been provided in conveyor belt to prevent emission due to transportation. 2. Tawa - II UG mine does not contain CHP / Coal Crushing facility. 3. All the internal roads have been black topped and regularly maintained to prevent fugitive emission. 4. Sprinkler & Rain guns have been installed along the coal stock Yard, near Internal Coal Transportation Road, Near Way bridge and Coal Bunker for dust suppression purpose. 5. Mine is located in a dense forest which is an effective means of Wind barrier. <p>In addition to that, fugitive emission data is being collected on fortnightly basis. Test reports related to fugitive monitoring data is being undertaken through CMPDIL at 01 no. of locations on a fortnightly basis. Perusal of the test reports reveal that all the monitored parameters are well within the stipulated standards.</p>
vi.	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc. should be provided with ear plugs/muffs.	<p>Condition Complied.</p> <ul style="list-style-type: none"> • Ear muffs are being provided to workers working in under ground mining operations. • Noise monitoring reports as monitored by NABL accredited laboratory i.e., CMPDIL were furnished during the site visit and the noise levels are noted to be well within the stipulated limits. • Monitoring of Noise levels are being carried out by CMPDIL on

S. No.	Condition	Compliance
		fortnightly basis and the results are within the permissible limit. Copy of the report enclosed as Annexure - 9
vii.	Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May 1993 and 31 st December 1993 or as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.	<p>Condition Complied. There is a small unit workshop meeting day to day needs of drills bit sharpening and minor repairs of small drill machines etc. as such there is no effluents or any other kind of liquid waste discharged from workshop. The wastewater generated during the mining operations is being initially accumulated in the mine sump, which acts primary settling pond. The water from the underground mine sump is again being subjected to settling in the sedimentation tank constructed at the surface.</p> <p>An area level central workshop is functional outside the mine lease area, Where small fabrication works like Roof bolt Production, Coal tub production have been carried out and no effluent has been generated from the Area workshop.</p>
viii.	Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.	Condition Complied. Vehicle used for transportation are being covered with tarpaulins and optimally loaded. PUC has been checked for each vehicle and records have been maintained.
ix.	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	<p>Condition Complied. A Full fledged NABL approved Environmental laboratory of CMPDIL working at Jaripatka, Nagpur with qualified muff-disciplinary team of engineers along with adequate no. of field staff for carrying out all the Routine environmental monitoring of all WCL projects including this project & Air, Water and Noise Quality Monitoring is being carried out at every fortnight interval.</p> <p>In Addition to that, One Continuous Ambient Air Quality Monitoring Station has been established in the Premises of Area General Manager Office, WCL Pathakhera Area for monitoring of Ambient Air Quality in a continuous manner.</p>
x.	Personal 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	Condition Complied. Personnel working in dust areas have been provided with dust masks and ear plugs. Vocational training is being accorded to all mine workers (both department and contractual staff) on an

S. No.	Condition	Compliance
	<p>programme of the workers should be undertaken periodically to observe any contraction due to exposure to dust and to take corrective measures, if needed.</p>	<p>annual basis.</p> <p>Periodical health check up of Mine workers are carried out regularly with the purpose of detecting occupational diseases & hearing impairment.</p> <p>PP has set up of 60 bedded Area Hospital in Pathakhera Area with 08 qualified doctors catering to the medical needs of the employees and local populace.</p> <p>The following infrastructure is available in the area Hospital:</p> <ul style="list-style-type: none"> • Qualified Doctors • Qualified lab technicians • Spirometry instrument • ECG Machine • Audiometer • X ray Machine • Blood testing apparatus <p>The preventive measures / medicine for burns, malaria and provision of antisnake venom are ensured at Area Hospital.</p> <p>Periodical Medical Examination (PME) is carried out compulsorily for each employee once in three years up to the age of 50 Years and for those above 50 years is once in a years.</p> <p>WCL is having occupational Health Committee at the corporate level as well as at the unit level for regular health status monitoring of all employees.</p> <p>No person has been detected with coal miners pneumoconiosis during the last 5 years.</p>
xi.	<p>A separate Environmental management cell with suitable qualified personnel should be set up under the control of s Senior Executive, who will report directly to the Head of the company.</p>	<p>Condition Complied. A separate Environmental management cell exists at Mine Level, Area Level and at Corporate HQ Level.</p> <p>a) At Area Level: Area General Manager of the Area coordinate the environmental activities of various units in the area in implementing all necessary provisions as per act assisted by Area Environment Officer at Area level for generation of environmental</p>

S. No.	Condition	Compliance
		<p>data and management of all aspect of environment along with the team of Engineers of CMPDIL for collection, analysis and interpretation of samples.</p> <p>b) At Project level : At project level Sub Area Manager and Manager primarily responsible for land resource management assisted by Project Environment Officer and other staff for Env. Pollution mitigation measures, environment monitoring and field activities like subsidence measurements, dust suppression, etc.</p>
xii.	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 and its Regional Office at Bhopal.	<p>Condition Complied.</p> <p>The funds earmarked are used exclusively for Environment protection measures are kept separately in the form of Separate Environment Capital Budget & Environment Revenue Budget and not used for any other purpose. Expenditure under capital head and revenue head as maintained Properly and uploaded on Parivesh portal with every Half yearly EC Conditions Compliance Report.</p> <p>Capital Expenditure till March 2023 = Rs. 187.08 Lakhs</p> <p>Revenue Expenditure till March 2023 = Rs. 430.18 Lakhs</p>
xiii.	The Regional Office of the Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office (s) of the Regional Office by furnishing the requisite data / information /monitoring reports.	Full cooperation shall be extended by the project officials to the Regional Officials of MOEF&CC.
xiv.	A copy of the clearance letter will be marked to concern Panchayat/local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.	<p>Condition Complied.</p> <p>Copies of the Environment Clearance letter have been sent to PANCHAYAT SECY. OF NEARBY VILLAGES (i.e. BHOGAIKHAPA, SHAKTIGARH & SHOBHAPUR VILLAGE) vide letter No. PKD/TAWA - II/2021/ 854 dt. 15/06/2021.</p> <p>In the similar manner,</p> <p>A copy of the Environment Clearance letter has been sent to Gram Bharti mahila Mandal (NGO) vide letter No. PKD/TAWA - II/2021/ 855 dt. 15/06/2021.</p>
xv.	State Pollution Control Board should be display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tahsildar's Office for 30	This Condition is pertaining to MPPCB

S. No.	Condition	Compliance
	days.	
xvi.	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance.	<p>Condition Complied.</p> <p>In 2006, on receipt of EC copy, We have given the advertisement in the following newspapers:</p> <ol style="list-style-type: none"> 1. NAV BHARAT (NAGPUR EDDITION) IN HINDI LANGUAGE ON 23.02.2007 2. DAINIK JAGARAN (BHOPAL EDDITION) IN HINDI LANGUAGE ON 23.02.2007 3. LOKMAT SAMACHAR IN HINDI LANGUAGE ON 19/09/2006 4. DAINIK MAT MATANTAR IN HINDI LANGUAGE ON 06/10/2006 <p>In 2021, on receipt of Revalidated EC copy, We have given the advertisement in the following newspapers:</p> <ol style="list-style-type: none"> 1. NAV BHARAT (BHOPAL EDDITION) IN HINDI LANGUAGE ON 21.01.2021 2. RAJ EXPRESS – (BETUL EDDITION) IN ENGLISH LANGUAGE ON 21.01.2021 <p>(Copies of advertisements attached)</p>
3.	The ministry or any other competent authority may stipulate any further condition for Environmental protection.	The PP agrees to the condition.
4.	Failure to comply with any of the condition mentioned above may result in with drawl of this clearance and attract the provisions of the environmental protection Act 1986	The PP agrees to the condition.
5.	The above conditions will be enforced inter alia under the provision of the water (Prevention and control of pollution) Act 1974 and Air (Prevention and control of pollution) Act 1981 the environmental (Protection) Act 1986 and the public Liability insurance Act 1991 along with their amendment and rules.	The project agrees to the condition.

C. Additional Conditions Stipulated in Revalidation of EC vide MOEF OM No. J-11015/53/2006-IA-II(M) Dated 15th January, 2021

S. No.	Condition	Compliance
1.	PP shall obtain prior permission of Central Ground Water Authority for extraction or intersecting of ground water.	Condition complied. Mine Management has already obtained No Objection Certificate (NOC) for Ground Water Abstraction from Central Ground Water Authority for vide NOC No: CGWA/NOC/MIN/ORIG/2021/14068 dated

S. No.	Condition	Compliance
		17/12/2021 valid up to 16/12/2023
2.	Transportation of coal shall be done only on concrete road instead of kuchcha road -Bogaikhapa (presently being done). Concrete road shall be built within six months and compliance shall be submitted to Ministry's Regional Office.	<p>Condition duly complied. Transportation of coal is being done only on concrete road. Black topped metalled road provided and maintained for transportation of coal:</p> <ol style="list-style-type: none"> 1. Main gate to Tawa junction= 5.5 km 2. Mine gate to bunker to Way bridge = 220 meter <p>Since the mining activities including coal transportation are far away located from the Bhogaikhapa Village.</p> <p>Construction of Cement concrete road of length 400 m has been completed at Bhogaikhapa village. (Work Completion Certificate and Photographs of RCC road enclosed)</p>
3.	PP shall be use only High axle trucks of 40-50 tonne capacity for transportation of coal.	<p>Complied</p> <p>Coal transportation is being done by high axle trucks of 40tonne and above.</p>