No.J-11015/1000/2007-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O.Complex,
New Delhi -110510;

Dated: 27th April 2010

To
General Manager (W.B.P/Env.),
M/s South Eastern Coalfields Ltd.,
Bilaspur, Chhattisgarh.

Sub: Expansion of Chhal Opencast Coal Mine Project (1 MTPA to 3 MTPA with a peak production o 3.5 MTPA and increase in project area from 222.439 ha to 641.013 ha) of M/s South Eastern Coalfields Ltd., located in village Lat, Tehsil Dharamjaigarh, district Raigarh, Chhattisgarh - environmental clearance – reg.

Sir,

This is with reference to letter No. 43011/108/2007-CPAM dated 23.08.2007 forwarding the application for Terms of Reference (TOR) and this Ministry's letter dated 17.12.2007 granting TOR to the above-mentioned project and subsequent letter No. CIL/EMP-TOR/2009/08 of M/s CIL dated 19.02.2009 with application for environmental clearance based on TOR and letters of M/s SECL dated 20.06.2009 and 03.03.2010 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. The project is for expansion in Chhal Opencast Coalmine Project in terms of **annual production capacity of coal from 1MTPA to 3 MTPA with a peak production capacity of 3.5 MTPA and project area from 222.439 ha to 641.013 ha.** The project was granted environmental clearance on 27.03.2006 for a production capacity of 1 MTPA of coal in a ML area of 222.439 ha. Of the total lease area, 313.579 ha is agricultural land, 176.71 ha is forestland, 54.996 ha is wasteland, 2.520 ha grazing land and 5.890 ha is surface water bodies. Of the total project area, 137.27 ha is for quarry, 1 ha is for storage of topsoil, 37 ha is for ext. OB dump, 1 ha is for mineral storage, 36.73 ha is for infrastructure and buildings, 10 ha is for green belt, 13 ha is for township, 407.013 ha is for safety zone and fro future mining. There are a number of nalas such as Dom nala, Jhampi, Sukhia, and Bojia nalas flowing in the study area. River Kurket flowing along east-west direction, joins River Mand south of the ML. River Mand flows along the western boundary of the ML is proposed to be modified by constructing an embankment along River Mand. A 60m barrier between the Mand River and the ML is proposed. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 15 km buffer zone. A number of reserved and protected (open, mixed forest) are found in the buffer zone. The core zone falls partially in forest. The study area including the mine area is visited by elephants of Dharmajaigarh and Raigarh Forest Divisions; Conservation Plan has been prepared. The project involves R&R of one village – Lat involving 550 PAFS of which 329 have been given compensation. Of the balance, 25 have been rehabilitated and 69 are awaiting compensation.

Expansion of the mine is form 1 million tonnes per annum (MTPA) to 3.5 MTPA of coal production. Mining will be both opencast (OC) be mechanised method using surface miner for coal extraction and shovel-dumper for OB removal. Blasting is limited to OB removal. Of the total lease area, 137.27 ha is for quarry area, area for ext. OB dumps 37 ha, infrastructure & other facilities including roads 49.73 ha, safety zone 70 ha and area for future mining 347.013 ha. Entire mineral transportation of **10606 TPD** of coal from mine pit top to Robertson's Railway siding located at a distance of 18km is presently by road and thereafter by rail. It is proposed to establish a railway siding near to the mine lease. Ultimate working depth of the mine is 140 m below ground level (bgl). Water table is in the range of 6.64-11.02 m bgl during pre-monsoon and 4.36-5.38m bgl during post-monsoon. Peak water demand is 442 m^3/d of water of which 200 m3/d is for dust suppression, 142 m3/d is for domestic consumption, 20 m3/d is fer green belt, 501 m3/d is workshop, and balance for other uses. Of the total water demand, 250 m3/d would be met from mine water, and 192 m3/d for domestic consumption would be met from groundwater. The peak mine water discharged would be

M.(M)/Sub Area Manager
Chhal Sub Area,SECL
Raigarh Area

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Notary, Distt. Raigarh (C.G.)
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Janki Prasad Patel
Distt.

4580 m3/d into a seasonal nala flowing along the ML. An estimated 57.70 Mm3 of OB would be generated over the balance life of the mine, of which 16 Mm3 would be would be stored in external OB dump of 37 ha of a max. height of 60m from ground level dumped. Backfilling would begin from 2nd year of expansion project. An area of 110.95 ha of quarry area would be reclaimed with vegetation and the balance 26.32 ha would be left as a void/water body for further expansion in the dipside. Balance life of the project at the rated capacity of 3.5 MTPA is 9 years. Mining Plan of the project was approved by SECL on 22.10.2007. Public Hearing was conducted on 04.08.2008. Capital cost of the project is **Rs. 70.96 crores**

2. The Ministry of Environment & Forests has examined the application in accordance with the EIA Notification 2006 and under the provisions thereof, hereby accords environmental clearance for the above-mentioned **Chhal Opencast Coalmine project** of **M/s South Eastern Coalfields Ltd. for expansion in production of coal from 1 MTPA to 3.5 MTPA rated capacity and increase in project area from 222.439 ha to 641.013 ha** under the provisions of the Environmental Impact Assessment Notification, 2006 and amendments thereto and Circulars issued thereon and subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

(i) No mining operations shall be undertaken in 176.710 ha of forestland which shall be maintained as safety zone.

(ii) Mining shall be carried out as per statuette at a safe distance from the surface water bodies flowing in and near the Mine Lease/ project area. The plan for modification of the natural surface drainage by construction of an embankment shall be done in consultation and approval of the concerned State Flood and Irrigation Department. Embankment to be constructed shall be based on peak flow data and shall be at least 3m above the HFL. The slope of the embankment shall at least 2:1 towards the ML and shall be stabilised with plantation.

(iii) Top soil shall be stored in the earmarked area and used for green belt development and for plantation/reclamation within a year of its generation

(iv) OB shall be stacked at the earmarked external OB dumpsite of 37 ha within ML area for the opencast operations of a maximum height of 60m consisting of 2 benches of 30m each. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites including slope stability shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhopal on a yearly basis.

(v) Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity shall also be provided adequate retention period to allow proper settling of silt material.

(vi) Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.

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

(vii) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.

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Sub Area Manager
Chhal Sub Area, SECL
Raigarh Area

(viii) Water sprinkling system (mist type) shall be provided to check fugitive emissions from crushing operations, conveyor system which shall be closed, haulage roads, transfer points, etc.

(ix) Drills shall be wet operated only.

(x) Mineral transportation from coal mine to existing railway siding by road shall shift to rail mode within 2 years after a railway siding is established within/near the project area.

(xi) Controlled blasting shall be practiced with use of delay detonators and only during daytime. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.

(xii) An afforestation plan covering an area not less than 324.66 ha shall be implemented, which includes backfilled area (110.95 ha) and ext. OB dump (37 ha), along ML boundary, green belt, along roads, infrastructure, safety zone, undisturbed/vacant land (176.71 ha) and township area outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha

(xiii) Backfilling shall start by the 2nd year of expansion operations. Of the total 137.27 ha of the quarry area, an area of 110.95 ha of excavated area shall be reclaimed with plantation/afforestation by planting native plant species such as Bamboo (*Dandrocalamus strictus), Dandrocalamus rhedhii, Ficus sp, Bucchnania lanzen, Feronia elephanta, Miliusa velutina etc.* The Committee also suggested some grass species such as *Thysanolaena agrostis, Cymbopogon flexuosus, Iseilema laxum sp., Eflunda mutica, Dycanthus sp Pennisetum purpureum (Elephant grass) Erianthus ravennae, E. elephantinus)* which would serve as fodder for the elephants *and other native species* in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. The balance 26.32 ha of decoaled the void left for further expansion in the dipside shall be converted into a water reservoir, shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir fenced.

(xiv) The Wildlife Conservation Plan prepared for in-situ conservation of the wildlife particularly the rare and endangered species/Schedule-I and II fauna particularly Indian Elephant reported within the study area and the mine and endangered flora and species of medicinal importance found in the study area shall be implemented in consultation with the Forest and Wildlife Departments in the State Government. Separate funds shall be earmarked for implementation of the various activities there under and the status thereof shall be regularly reported to this Ministry and the MOEF Regional Office, Bhopal. The project authorities shall also participate in a Regional Action Plan of the State Government for conservation of flora and fauna including Indian Elephant found within the study area including allocation of budget (capital and revenue) towards Wildlife Conservation Plan. The details of progress made and steps/measures undertaken including costs incurred under the Plan shall be regularly reported to MOEF RO, Bhopal and also uploaded on the company website.

(xv) Prior approval of the CGWA shall be obtained for using ground water 172 m3/d for the mining operation.

(xvi) A detailed ground water monitoring action plan (along with budgetary provisions) for monitoring groundwater quality and level in consultation with the Central/State Ground Water Board be prepared and implemented. Regular monitoring of groundwater level and quality shall be carried out by establishing a network of exiting wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.

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Y.G.M.(M)/Sub Area Mana
Chhal Sub Area,SECL
Raigarh Area

(xvii) A Plan for water conservation and recharge measures of ground water along with budgetary provisions be prepared and implemented in consultation with the Central/State Ground Water Board to mitigate the adverse impact of mining which may lead to depletion of water levels in the area. As a contingency plan, pits as artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring of groundwater levels indicates declining of water table. Any additional water requirement for mining operation shall be met from rainwater/recycling of water only. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

(xviii) ETP shall also be provided for treatment of effluents from workshop, and an STP shall be provided for treating wastewater from the township and the treated effluents shall be used for green belt development. An estimated 4580 m3/d of mine water shall be treated to prescribed standards before discharge into the surface waters/agricultural use.

(xix) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations 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 one year and the results reported to this Ministry and to DGMS.

(xx) For monitoring land use pattern and for post mining land use, a time series of landuse maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhopal.

(xxi) R&R of village Lat shall be not less than the norms prescribed in National R&R Policy 2007 and shall be implemented within a specified agreed time schedule.

(xxii) A detailed Plan for CSR with specific budgetary allocation (capital of Rs 1 crore and revenue expenditure of Rs 5 per tonne of coal) for various skill development and alternate livelihood programmes and schemes and implemented through establishment of cooperatives and SHGs particularly for the tribal populations shall be implemented. A detailed survey shall be carried on the socio-economic status of the local communities living in the villages near the project area before start of the mining operation based on a scientific methodology based on UNDP Human Development Index and monitoring the impact of project on the socio-economic and human development of the local communities, which shall be used as for monitoring the progress of the status of human and socio-economic development in the area during and after the project life which is reflected in their Annual Report of the company and is also furnished as part of the Monitoring Report submitted to MOEF.

(xxiii) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests five year before mine closure for approval. Habitat Restoration Plan of the mine area shall be carried out using a mix of native species found in the original ecosystem, which were conserved in-situ and ex-situ in an identified area within the lease for reintroduction in the mine during mine reclamation and at the post mining stage for habitat restoration into forest land (324.66 ha) using native species found during pre-mining period, and agricultural land (179.939 ha) including grazing land.

B. General Conditions

(i) No change in technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.

(ii) No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.

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Chhal Sub Area, SECL
Raigarh Area

(iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in particulates shall be carried out at least once in six months.

(iv) Data on ambient air quality (PM10, PM 2.5, SO2 and NOx and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognised under the EP Rules, 1986 shall be furnished as part of the compliance report.

(v) Adequate measures shall 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 shall be provided with ear plugs/muffs.

(vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents.

(vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of the mineral shall be covered with tarpaulins and optimally loaded.

(viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analysed through a laboratory recognised under EP Rules, 1986.

(ix) Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects.

Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.

(x) A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company.

(xi) The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhopal.

(xii) The Project authorities shall 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 and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in

(xiii) A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.

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Sr. Manager (M)/Sub Area Manager
Chhal Sub Area, SECL
Raigarh Area

(xiv) A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.

(xv) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as PM10, PM2.5, SO_2 and NO_x (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.

(xvi) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.

(xvii) The Regional Office of this 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.

(xviii) The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent tot the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.

3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.

5. The above conditions 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. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

(Dr.T.Chandini)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arear Colony, Bhopal – 462016.
4. Chairman, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk,Main Road, Avanti Vihar, RAIPUR-Chhattisgarh – 492001.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. District Collector, Raigarh, Government of Chhattisgarh.
8. Monitoring File 9. Guard File 10. Record File.

5/3/2016
G.M.(M)/Sub Area Manager
Chhal Sub Area,SECL
Raigarh Area

16-2-16
महाप्रबंधक
General Manager
एस.ई.सी.एल. रायगढ़ क्षेत्र
SECL, Raigarh Area

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21 MAR 2012

HQ, Bilaspur

Received SO(P&P) 595
Date 22.7.17

No. J-11015/1000/2007-IA.II (M)
Government of India
Ministry of Environment, Forest & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi-3
Dated: 20th July, 2017

To,

The General Manager (W B P & Environment)
M/s South Eastern Coalfields Ltd,
W B P & Environment Department,
Seepat Road, P B. No.60
Bilaspur - 495 006 **(Chhattisgarh)**

Email: gmenvtsecl@gmail.com;

Sub: Chhal OC expansion project from 3.50 MTPA to 7.50 MTPA (Peak) in an area of 1342.86 ha by M/s South Eastern Coalfields Limited located in District Raigarh (Chhattisgarh) - TOR - reg.

Sir,

This has reference to your letter No. SECL/BSP/ENV/2017/RGH/6663 dated 15.06.2017 along with online proposal No.IA/CG/CMIN/65454/2017 dated 16.06.2017 and subsequent letters dated 22.06.2017, 29.06.2017 and 30.06.2017 on the above-mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has considered the application. It is noted that the proposal is for grant of TOR to the expansion of Chhal Opencast Coal Mine from 3.50 MTPA to 7.50 MTPA (Peak) in an area of 1342.86 ha by M/s South Eastern Coalfields Limited located in District Raigarh (Chhattisgarh).

3. The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Projects in its 13th meeting held on 29th June, 2017. The details of the project, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported to be as under:-

(i) The project was accorded last EC vide letter No.J-11015/1000/2007-IA.II (M) dated 27th April, 2010 for 3.5 MTPA capacity with mining lease area of 641.013 ha.
(ii) The latitude and longitude of the project site are 22° 4' 40" and 22° 6' 27" and 83° 6' 10" and 83° 9' 10" respectively.
(iii) Joint Venture: No Joint Venture
(iv) Coal Linkage : Thermal Power Stations
(v) Employment generated / to be generated: 296 No.
(vi) Benefits of the project: This coal Mine will go a long way in fulfilling the demand nation's electricity and other coal based industries, apart from earning revenue for the government. Opportunity of employment for the project affected villagers and allied industries.

Copy for Inf & Further necessary action as per Conditions SO(P&P)
- SAM - Chhal SA
- N.O. (Forest) Rgh Area - Shi Sidanand
- N.O. (Envt) Rgh Area - Shi Sandip Markam

Envt Clearance File - (3)

NO(E&P) pr. discuss.

महाप्रबंधक (खनन) उपक्षेत्रीय प्रबंधक
एस.ई.सी.एल., छाल उपक्षेत्र
रायगढ़ क्षेत्र

महाप्रबंधक (खनन) उपक्षेत्रीय प्रबंधक
एस.ई.सी.एल., छाल उपक्षेत्र
रायगढ़ क्षेत्र

(vii) The land usage of the project will be as follows:

S.No.	LAND USE	Within ML Area(ha)	Outside ML Area(ha)	Total area (ha)
1	Agricultural Land	825.827		825.827
2	Forest Land	185.017		185.017
3	Waste Land	228.649		228.649
4	Grazing Land	31.632		31.632
5.	Surface Water Bodies	23.426		23.426
6	Settlements	-----		-----
7	Others(specify)	48.309		48.309
Total		1342.86		1342.86

Pre-Mining:

S. No.	Land use	Area (in ha)
1.	Tenancy/agricultural land	825.827
2.	Forest land	185.017
3.	Government land • Grazing Land: 31.632 Ha. • Water body: 23.426 Ha. • Waste land: 228.649 Ha. • Others: 48.309 Ha.	332.016
	Total	1342.86

Post- Mining:

S. No.	Land use	Area (in ha)
1.	Quarry Area • Reclaimed Area: 794.01 ha • Final Void/Water body: 81.00 ha	875.01
2.	External dump • Reclaimed Area: 130.73 ha	130.73
3.	Safety zone as green belt • Afforested Area: 144.47 ha	144.47
4.	Infrastructure, Explosive Magazine etc. • Afforested Area: 5.00 ha • Built-up Area: 45.00 ha	50.00
5.	R & R Site • Built-up Area: 50.00 ha	50.00
6.	Others • Cultivable Land: 92.65 ha	92.65
	Total	1342.86

महाप्रबंधक (खनन) उपक्षेत्रीय प्रबंधक
एस.ई.सी.एल., छाल उपक्षेत्र
रायगढ़ क्षेत्र

Core area:

S. No.	Land use	Area (ha)
1.	Quarry Area	875.01
2.	External dump	130.73
3.	Safety zone as green belt	144.47
4.	Infrastructure, Explosive Magazine etc	50.00
5.	R & R Site	50.00
6.	Others	92.65
	Total	1342.86

(viii) Total geological reserve is 197.257 MT. The mineable reserve 151.36 MT, extractable reserve is 151.36 MT. The per cent of extraction would be 100 %.

(ix) The coal grade is G-11. The stripping ratio is 5.63 Cum/tonne. The average Gradient is 4^0 - 11^0. There will be 13 seams with thickness ranging upto 12.40 m.

(x) Total estimated water requirement is 0.917 cum/day. The level of ground water ranges from 2.52 m to 14.27 m

(xi) The method of mining would be Opencast. (Coal- surface miner with front end loader and.dumper; OB- Showel and dumper combination.)

(xii) There are 13 No of seams.

(xiii) There will be one External OB dump shall be created during the initial years of mining with Quantity of 71.52 Mbcm in an area of 130.73 ha with height of 90 m above the surface level and two internal dump with Quantity of 780.55 Mbcm in an area of 677.82 ha.

(xiv) The final mine void would be in 81 ha with depth varying upto 300 m and the Total quarry area is 875.01 ha. Backfilled quarry area of 794.01 ha shall be reclaimed with plantation. A void of 81ha with depth varying upto 300 m which is proposed to be converted into a water body

(xv) The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

(xvi) The life of mine is 30 Years.

(xvii) Transportation: Coal transportation in pit by Trucks and In-pit Belt Conveyors both (Installation of belt conveyor will start from third year onward.), Surface to Siding by trucks and loading at siding by railway and to local consumers by Trucks.

(xviii) There is R & R involved. There are 450 PAFs.

(xix) Cost: Total capital cost of the project is Rs. 610.63 Crores. CSR Cost: 2% of the average net profit of the Company for the three immediate preceding financial years or Rs.2.00 per tonne of coal production of previous year whichever is higher. R&R Cost 12.50 Crore. Environmental Management Cost Rs. 6090.77 Lakhs).

(xx) Water body: Mand River is flowing southerly by the side of the quarry.

(xxi) Approvals: Ground water clearance obtained on 13.01.2006. Project Report of Chhal OC (Seam-III)Project(6 MTY) was approved by CIL Board in its 302nd meeting held on 16/12/2013. Mine closure plan is an integral part of mining plan.

(xxii) Wildlife issues: Wildlife issues shall be dealt after Registration, TOR and other formalities.

(xxiii) Forestry issues: Total forest area involved 185.017 ha, for which application has been made on 10th May, 2016. Forest clearance is awaited.

(xxiv) Total afforestation plan shall be implemented covering an area of 929.74 ha at the end of mining. Green Belt over an area of 144.47 ha

(xxv) Pending legal litigations -

1. Case No. 218/2014 = Pending at Distt. Court RGH (Prodn. More than EC).
2. Case No. Cr.MP 408-413/2007 = Both the cases 408 & 413 have been disposed of.

महाप्रबंधक (खनन) उपक्षेत्रीय प्रबंधक
एस.ई.सी.एल.,छाल उपक्षेत्र
रायगढ़ क्षेत्र

(xxvi) Public Hearing for the last EC was held on 4th August, 2008.
(xxvii) The Ministry's Regional Office at Nagpur carried out the site visit on 23rd December, 2016 for compliance status of the EC conditions. In response to the observations, the present status and the action plan for compliance has been submitted.

4. The Expert Appraisal Committee in its 13th meeting held on 29th June, 2017, has recommended the proposal for grant of Terms of Reference. Based on the recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords Terms of Reference to the expansion project of **Chhal OC expansion project from 3.50 MTPA to 7.50 MTPA (Peak) in an area of 1342.86 ha by M/s South Eastern Coalfields Limited located in District Raigarh (Chhattisgarh),** for preparation of EIA/EMP reports with public consultations, subject to the scope of work as defined in the Standard ToR notified by this Ministry for such projects/activities **(as per Annexure)** under the provisions of the Environment Impact Assessment Notification, 2006 read with subsequent amendments/circulars thereto, and other terms and conditions as under:-

- Cumulative impact of all the existing industrial activities in the study area and also those in the pipeline/proposed, shall be studied to arrive at a comprehensive picture and planning of adequate environmental safeguards.
- For proper baseline air quality assessment, adequate monitoring stations (4-5 nos) in the downwind areas need to be set up and included in the air quality modelling.
- Ecological restoration and mine reclamation to be done with local/native species found in the area.
- Wildlife Conservation Plan to be prepared and submitted to the concerned authority for obtaining the necessary approval, if any.

4.1 General Conditions

(i) All documents should be properly indexed, page numbered.
(ii) Period/date of data collection should be clearly indicated.
(iii) Authenticated English translation of all material provided in Regional languages.
(iv) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
(v) The letter/application for EC should quote the MOEF file No. and also attach a copy of the letter prescribing the TOR.
(vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
(vii) General Instructions for the preparation and presentation before the EAC of TOR/EC projects of Coal Sector should be incorporated/followed.
(viii) The aforesaid TOR has a validity of **three** years only.
(ix) Grant of TOR does not necessarily mean grant of EC.
(x) Grant of TOR to the present project does not necessarily mean grant of TOR/EC to the captive/linked project.
(xi) Grant of TOR to the present project does not necessarily mean grant of approvals under the Forest (Conservation) Act, 1980 or the Wildlife (Protection) Act, 1972.
(xii) Grant of EC is also subject to circulars issued under the EIA Notification 2006, which are available on the MOEF website: www.envfor.nic.in

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5. You are required to submit the final EIA/EMP prepared as per TORs to the Ministry within 3 years as per this Ministry's O.M. No.J-11013/41/2006-IA. II (I) dated 8th October, 2014 for considering the proposal for environmental clearance.

6. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc. vide Notification of the MoEF dated 19th July, 2013.

20/7/2017

(S K Srivastava)
Scientist E

Copy to:

The Member Secretary, Chhattisgarh Environment Conservation Board, Commercial Complex, C.G. Housing Board Colony, Kabir Nagar, District Raipur **(Chhattisgarh)** - 492 099

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Annexure

Standard TOR for conducting EIA study for opencast coal mining project and information to be included in EIA/EMP report:

(i) An EIA-EMP Report shall be prepared for..... MTPA rated capacity in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.

(ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.

(iii) A toposheet specifying locations of the State, District and Project site should be provided.

(iv) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.

(v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note on the land use.

(vi) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.

(vii) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.

(viii) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.

(ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion /modification of drainage and their realignment, construction of embankment etc. should also be shown on the map as per the approval of Irrigation and flood control Department of the concerned state.

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(x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown in the map along with the status of the approval of the competent authority.

(xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

LANDUSE DETAILS FOR OPENCAST PROJECT should be given as per the following table:

Sl. No.	Landuse	Within ML area (ha)	Outside ML area (ha)	Total
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

(xii) Break-up of lease/project area as per mining plan should be provided.

(xiii) Impact of changes in the land use due to the project if the land is predominantly agricultural land/forestland/grazing land, should be provided.

(xiii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM_{10}, $PM_{2.5}$, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.

(xiv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.

(xv) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.

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(xvi) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.

(xvii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.

(xviii) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(xix) Detailed water balance should be provided. The break-up of water requirement for the various mine operations should be given separately.

(xx) Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users in the upstream and downstream of the project site. should be given.

(xxi) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.

(xxii) Impact of blasting, noise and vibrations should be given.

(xxiii) Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.

(xxiv) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.

(xxiv) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.

(xxv) Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.

(xxvi) Efforts be made for maximising progressive internal dumping of O.B., sequential mining, external dump on coal bearing area and later rehandling into the mine void.--to reduce land degradation.

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(xxvii) Impact of change in land use due to mining operations and plan for restoration of the mined area to its original land use should be provided.

(xxviii) Progressive Green belt and ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEFCC given below) and selection of species (native) based on original survey/land-use should be given.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	Land use Category	Present (1st Year)	5th Year	10th Year	20th Year	24th Year (end of mine life)*
1.	Backfilled Area(Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL					

* As a representative example

Table 2 : Stage Wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others(Undisturbed Area/etc)		TOTAL	
1.	1st year										
2.	3rd year										
3.	5th year										
4.	10th year										
5.	15th year										
6.	20th year										
7.	25th year										
8.	30th year										
9.	34th year(end of mine life)										
10.	34- 37th										

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9.	34th year(end of mine life)											
10.	34- 37th											

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	Year (Post-mining)										

* As a representative example

(xxix) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	Land use during Mining	Land Use (ha)				
		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External OB Dump					
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
5.	Built up area					
6.	Green Belt					
7.	Undisturbed Area					
	TOTAL					110

(xxx) Flow chart of water balance should be provided. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. should be provided. Details of STP in colony and ETP in mine should be given. Recycling of water to the max. possible extent should be done.

(xxxi) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower in the mine should be given.

(xxxii) Risk Assessment and Disaster Preparedness and Management Plan should be provided.

(xxxiii) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.

(xxxiv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.

(xxxv) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.

(xxxvi) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.

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(xxxvii) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.

b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.

c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.

d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

(xxxviii) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxxix) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.

(xl) Status of any litigations/ court cases filed/pending on the project should be provided.

(xli) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.

(xlii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

FOREST CLEARANCE: Details on the Forest Clearance should be given as per the format given:

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl for. diversion of forestland
		If more than , provide details of each FC			

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SOUTH EASTERN COALFIELDS LIMITED
कार्यालय महा प्रबंधक /OFFICE OF THE GENERAL MANAGER
रायगढ क्षेत्र / RAIGARH AREA
P.B No.27, P.O: Raigarh, Distt.: Raigarh (C.G) 496001
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कण्डिका क्र. 11

पर्यावरण संरक्षण स्वीकृत प्रमाण पत्र (जिन प्रकरण मं लागू न हो उसके भारत सरकार का परिपत्र लगा कर उल्लेख करें) सिंचाई के प्रकरण में 10,000 हे. तक में राज्य पर्यावरण प्रदूषण मंडल से स्वीकृति (भारत सरकार पर्यावरण एवं मंत्राालय की अधिसूचना दिनांक 14. 09.2016) इससे अधिक में भारत सरकार पर्यावरण एवं वन मंत्राालय, नई दिल्ली से लिया जाना आवश्यक है।

हमारे द्वारा पूर्व मे SECL के CHHAL OPENCAST COAL MINE PROJECT (1 MTPA to 3 MTPA with a peak production of 3.5 MTPA) के लिये भारत सरकार पर्यावरण एवं वन मंत्रालय, नई दिल्ली से MOEF Letter No. J-11015/1000/2007-IA.II(M) Dtd. 27.04.2010 के तहत पर्यावरण स्वीकृति लिया गया था। वर्तमान में CHHAL OC SEAM-III (6MTY) परियोजना के लिये पर्यावरण स्वीकृति लेने की कार्यवाही की जा रही है।

वन मण्डलाधिकारी
धरमजयगढ़ वन मण्डल

16/7/19
महाप्रबंधक
General Manager
एस.ई.सी.एल. रायगढ़ क्षेत्र
SECL, Raigarh Area