

THE SINGARENI COLLIERIES COMPANY LIMITED
(A Government Company)
KHAIRAGURA OPENCAST EXPANSION COAL MINE PROJECT,
BELLAMPALLI AREA.



HALF YEARLY COMPLIANCE REPORT ON ENVIRONMENTAL CLEARANCE
CONDITIONS UP TO 31st MARCH, 2016.

FOR

KHAIRAGURA OPENCAST EXPANSION COAL MINE PROJECT,
BELLAMPALLI AREA.

Project Officer,
Khairagura opencast expansion project,
project office,
Goleti Township-village
Rebbanna- Mandal
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THE SINGARENI COLLIERIES COMPANY LIMITED
(A Government Company)
KHAIRAGURA OPENCAST EXPANSION COAL MINE PROJECT
BELLAMPALLI AREA

PART - I

**HALF YEARLY COMPLIANCE REPORT ON ENVIRONMENTAL CLEARANCE CONDITIONS UP TO
31st MARCH, 2016.**

SALIENT FEATURES OF THE PROJECT:

| | | | |
|----|----------------------------|---|--|
| 1. | Name of the project | : | Khairagura opencast expansion coal mine project |
| 2. | Organization | : | Singareni Collieries Company Limited |
| 3. | Coalfield. | : | Godavari valley coal field |
| 4. | Type of mine | : | Opencast |
| 5. | Technology | : | Shovel –Dumper combination |
| 6. | Environmental Clearance: | : | |
| | A. Letter no. & date | : | J-11015/28/2013-IA.II (M), dated: 06th February, 2015 & dt. 20.01.2016 corrigendum to EC respectively. |
| | B. Sanctioned capacity | : | 3.75 MTPA |
| | C. Mining lease area | : | 1217.50 Ha. |
| | D. Date of Public Hearing | : | 09.03.2007 |
| 7. | Location of the project | : | |
| | A. Village | : | Khairagura |
| | B. Tehsil | : | Tiriyani |
| | C. District | : | Adilabad |
| | D. State | : | Telangana state |
| | E. Latitude | : | North 19° 14' 10" to 19° 15' 20" |
| | F. Longitude | : | East 79° 16' 00" to 79° 18' 15" |
| | G. Topo sheet | : | 56 & 56 $\frac{M}{8}$ |
| | H. Nearest railway station | : | Rebbanna(14 KM) |
| | I. Nearest airport | : | Hyderabad (306 KM) |
| | J. Nearest town | : | Bellampalli(42 KM) |
| 8. | Address for correspondence | : | |
| | A. Name | : | Sri.G.Mohan Reddy |
| | B. Designation | : | Project Officer, Khairagura opencast expansion project |
| | C. Address | : | Project officer, Khairagura opencast expansion project ,C/o. GM's office, Goleti-village, Rebbana-Mandal, Adilabad (District), Telangana state-504292. |

| | | | |
|-----|--|---|--|
| | D. Pin Code | : | 504292 |
| | E. E-mail ID | : | po_khg@scclmines.com |
| | F. Telephone No. | : | 08735-231100, PO's cell no.9491144264, |
| | G. Fax No. | : | 08735-231662 |
| 9. | Life of the project | : | |
| | A. Date of opening | : | 01.07.2005 |
| | B. Date of expansion of project | : | 01.06.2015 |
| | C. Total Life of the project as per revised annual capacity i.e.3.75MTPA | : | 14 years from 01.04.2013 |
| | D. Balance life | : | 12 years from 01.04.2015 |
| 10. | Seams | : | |
| | A. No. of seams present | : | 3 |
| | B. Seams being worked | : | 3 |
| 11. | Depth | : | |
| | A. Minimum depth (m) | : | 25 |
| | B. Maximum depth (m) | : | 222 |
| | C. Present working depth (m) | : | 131 |
| 12. | Reserves | : | |
| | A. Total geological reserves | : | 74.31 MT |
| | B. Total extractable reserves | : | 66.87 MT |
| | C. Reserves already extracted | : | 23.768 MT |
| | D. Balance reserves | : | 43.102 MT |
| | E. Coal production during last 6 months | : | 1.803 MT |
| 13. | Overburden | : | |
| | A. Total hard OB (excluding topsoil) | : | 573.91 M.m ³ |
| | B. Hard OB extracted since inception (excluding topsoil) | : | 144.402 M.m ³ |
| | C. Hard OB removed in last 6 months (excluding topsoil) | : | 13.762 M.m ³ |
| | D. Avg. stripping ratio | : | 1: 9.86 (present-1 : 6.16) |
| 14. | Topsoil | : | |
| | A. Total topsoil | : | 10.86 M.m ³ |
| | B. Topsoil extracted since inception | : | 5.937 M.m ³ |
| | C. Topsoil removed in last six months | : | 0.366 M.m ³ |
| 15. | Land requirement | : | |
| | A. Total requirement | : | 1217.50 Ha. |
| | B. Forestland involved | : | 296.86 Ha. |
| | C. Non-forestland | : | 920.64 Ha. |

| | | | |
|-----|---------------------------------------|---|----------------|
| 16. | Activity wise land requirement in Ha. | As per EMP | Present status |
| | A. Quarry area | : 542.91 Ha. | 288.94 Ha. |
| | B. External OB dumps | : 388.57 Ha. | 372.24 Ha. |
| | C. Infrastructures | : 9.80 Ha. | 9.80 Ha. |
| | D. Other | : 276.22 Ha. | 125.67 Ha. |
| | E. Total | : 1217.50 Ha. | 796.65 Ha. |
| 17. | Statutory clearances | | |
| | A. Mining plan approval | : Revised mining plan was approved by MoC vide Lr.No. 13016 /2 /2006 -CA-II, dated:17th October, 2014. | |
| | B. Ground Water Clearance | : Lr.No.441/T/2007, dated:02.07.2007. | |
| | C. Consent For Establishment | : CFE order no.02/TSPCB/CFE/RO-NZM/ HO/2015 / 693, dt:04.11.2015. | |
| | D. Consent For Operation | : Consent Order No: TSPCB /PTN/ NZB /46 /HO/W&A/2015/446, dated: 09.06.2015. It is valid up to 30th September, 2017 with annual capacity of 3.0MTPA. An application has been submitted for issuing CFO expansion order with 3.75MTPA capacity vide lr. no.: BPA/ENV/C-05/2016/12, dt:13.01.2016. It is under process. | |
| | E. Forest Clearance | : The forestland required is 296.86 Ha. and non forestland required is 920.64 Ha. There is no change in total land requirement of the project. Forest clearance was obtained for 296.86 Ha. and details are furnished below. | |
| | | 1. Lr.No F.No.8-28/94-FC, dt:28 th September,2000 for 29.85Ha. | |
| | | 2. Lr. No.F.No.8-102/2000-FC, dt:10th September, 2003 for 140.30Ha. | |
| | | 3. Lr.No. F.No.8-28/94-FC, dt:1 st July 2011 for 126.71Ha. | |
| | F. Mining lease | : Tandur Mining Lease | |
| | G. Others (specify) | : nil | |
| 18. | R & R Involved | : 480 PDFs | |
| 19. | Men on roll | : 522 employees. | |

PART-I

COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS OF KHAIRAGURA OPENCAST EXPANSION COAL MINE PROJECT AS ON 31st MARCH, 2016.

4A. SPECIFIC CONDITIONS:

| cond. no. | condition | compliance status |
|-----------|--|---|
| (i) | The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC. | The year wise coal production figures are within the prescribed limit i.e. as specified in EC (3.75MTPA). The year wise coal and OB excavation details are furnished in table-1 of part-II. |
| (ii) | The validity of the EC is for the life of the Mine or as specified in the EIA Notification, 2006, whichever is earlier. | Agreed to this condition. The life of the expansion project is 14 years. |
| (iii) | The voids shall be filled up to the near ground level by the OB from the new Ullipetta Dorli mine. The coal transportation on road by mechanically covered trucks. | At final stage of the project, the void of the project will be filled up to the near ground level by the OB from the proposed Ullipetta Dorli relay project. Coal transport trucks are being covered with Tarpaulin before leaving the mine premises and over loading of trucks is being prevented. |
| (iv) | The coal loading at siding shall be by conveyer trucks. | The coal handling plant (CHP), Goleti is under construction and construction will be completed within six months. After completion of construction of Goleti CHP, the coal shall be loaded by conveyer through pre-weigh bin into wagons. |
| (v) | The social audit report of the CSR be submitted to the MOEF for record and be uploaded on to the Company's website. | <p>The requisitions received from peoples representatives of surrounding villages / constituencies are being forwarded to competent authority every year for approval.</p> <p>After getting approvals from the corporate, work wise MoU is entered with district collector and amount is being deposited in a/c of district collector, and CSR works are being taken up by Govt. Rural water supply dept., Govt. Panchayat Raj dept., State Govt. Transco, etc. as assigned by district collector.</p> <p>A committee from SCCL will inspect the progress of works and release amounts into a/c of district collector and collector release the respective amount to respective Govt. depts.</p> <p>However, the social audit will be carried out on CSR activities and report will be submitted to MoEF&CC, R.O., Chennai, and will be uploaded on to the company's website i.e. www.scclmines.com.</p> |
| (vi) | Instead of provision of bag filters, effective sensor operated water sprinkling system be provided for dust | Sensor activated water spraying system has been provided at crusher house of pit head coal handling plant for dust suppression. A mist sprayer was also provided |

| cond. no. | condition | compliance status |
|-----------|--|---|
| | suppression at crusher house and transfer points at pit head coal handling arrangement. | <p>at pit head CHP for dust suppression.</p> <p>Permanent water sprinkling arrangement was provided around pre-weigh bin and it is working well. A sensor activated wetting point was provided to wet loaded dumpers before unloading into the crushers.</p> <p>A 10 KL capacity water sprinkler is being deployed in every shift for sprinkling water on the internal roads & in the premises of CHP, and along coal transport road from KHG OCP to IB Tandur via. Goleti I & IA, BPA OCP-II Extn., etc.</p> <p>Three nos. of 28 KL & eight nos. of 10 KL capacity water sprinklers are being deployed in every shift for dust suppression on haul roads and approach roads, dumps, coal transport road, etc.</p> <p>Transport trucks are being covered with tarpaulin before leaving the mine premises and over loading of trucks is being prevented.</p> |
| (vii) | The proponent shall utilize the final void for dumping of overburden generated from the proposed "Ullipetta Block" (Relay Project) which is adjacent to the Khairagura OC Project. | The final void of the project shall be utilized for dumping of overburden generated from the proposed new "Ullipetta Block" (Relay Project) which is adjacent to the Khairagura OC Project. |
| (viii) | The final mine closure plan will be submitted to MOEF 5 years in advance of final mine closure for approval. | The balance life of the project is 12 years. The final mine closure plan will be submitted to the MoEF&CC, five years before final mine closure for approval i.e., in the year-2021. |
| (ix) | Coal transportation in pit Crusher to surface CHP through belt conveyor (1.5 Km length). Surface to siding by trucks 14Km and siding to loading by wagon. | In pit crusher technology was planned for the expansion project and it is under implementation. At present coal is being transported by dumpers to pit head CHP and there by to Rebbana siding, Mandamarri & Srirampur CHPs by trucks covered with tarpaulin. |
| (x) | The production shall be within the same Mining Lease area. | The coal is being excavated within the same mining lease area. |
| (xi) | The depth of the internal void shall be 40m from the ground level and should be adequate for fishery purpose. | At final stage of the project, the depth of internal void will be maintained at 40m from the ground level for productive use. |
| (xii) | All safety measures shall be taken as per CMR, 1957 and related circulars. | All safety measures are being taken as per CMR, 1957 and related circulars. The respective regional Director of Mines Safety & Dy.Director of Mines Safety, Hyderabad, are making inspections periodically and monitoring the compliance status. |
| (xiii) | The production shall be within the same Mining Lease area. | The coal is being excavated within the same mining lease area. |
| (xiv) | The OB shall be completely re-handled at the end of the mining and will be back filled up to the ground | Backfilling operations were commenced from January, 2013 and 16.473 M.m ³ of OB was backfilled in an area of 70.69Ha. up to 31.03.2016. The present RL of |

| cond. no. | condition | compliance status |
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| | level and covered with about a meter thick topsoil and put to use. The land after mining shall be brought back for agriculture purpose. | <p>backfilled area is 30m below the surface RL.</p> <p>At final stage of the project, the OB shall be re-handled and backfilled up to the ground level and covered with topsoil for agriculture purpose.</p> <p>The balance life of the project is 12 years and a final mine closure plan will be submitted to the MoEF&CC, Chennai before five years of final mine closure for approval i.e., in the year-2021.</p> <p>Reclamation will be taken up as per approved mine closure plan approved by MoEF&CC.</p> |
| (xv) | Garland drains be provided. | <p>Garland drain for a length of 3.6Km, deck drains of 2.6 Km length on first deck terrace and 1.9 Km length on second deck terrace were made for proper drainage system for dump-I.</p> <p>Garland drains were also made for a length 2.1Km around dump-II and 2.8Km length around dump-III.</p> <p>Eight siltation ponds of size 30 m x 30 m x 2 m were made followed by seven check dams for dumps to arrest silt and sediment flows from soil. Trench is provided around the quarry.</p> <p>The garland drains, deck drains, etc., are being regularly de-silted and maintained properly.</p> |
| (xvi) | Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine. | <p>The 1st stage diversion of Vattivagu was completed with the approval from state irrigation department and as per the design of the state irrigation & CAD only.</p> <p>The 2nd stage diversion of Vattivagu will be taken up only after obtaining necessary approval from state irrigation department and it will be done as per the design of the state irrigation & CAD.</p> <p>An earthen bund was made for 3.0Km length all along the Vattivagu reservoir (dimensions: top width-10m, bottom width-16m & height-3m above the HFL) to withstand the peak water flow and to prevent mine inundation. A toe wall is constructed for 2.0Km length along the earthen bund. The slopes of the earthen bund will be stabilized with plantation during the monsoon of the year, 2016.</p> |
| (xvii) | The CSR cost should be Rs.5 per tonnes of coal produced which should be adjusted as per the annual inflation. | The CSR plan is being implemented as per the CSR policy approved by SCCL's Board of Directors and as per this condition. The details of CSR activities taken up during last six months are enclosed as annexure-I. |
| (xviii) | Everybody in the core area should be provided with mask for protection against fugitive dust emissions. | Protective ware like dust respirators or dust masks are being provided to workmen working in core area for protection against fugitive dust emissions and adequate |

| cond. no. | condition | compliance status |
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| | | <p>training is being imparted to the workmen on safety and health aspects at the Mine Vocational Training Center provided in the area.</p> <p>76 nos. of dust respirators were issued during last six months.</p> <p>99 nos. of workmen were given training on safety and health aspects at mine vocational training centre during last six months.</p> <p>Details of dust respirators & ear-plugs issued at the mine and Mine Vocational Training details are enclosed as annexure-II of part-II.</p> |
| (xix) | Dust mask to be provided to everyone working in the mining area. | <p>Protective ware like dust respirators or dust masks are being provided to every workman exposed to dusty environment periodically and adequate training is being imparted to the workmen on safety and health aspects at the Mine Vocational Training Center (MVT) provided in the area.</p> <p>76nos. of dust respirators were issued during last six months.</p> <p>Details of dust respirators & ear-plugs (issued) and Mine Vocational Training are enclosed as annexure-II of part-II.</p> |
| (xx) | The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area. | <p>The supervisory staff is ensuring wearing of dust mask by workmen working in the core area while carrying out inspection of core area.</p> <p>The concerned supervisors were instructed in writing to ensure that all workmen working in core area must wear dust masks.</p> |
| (xxi) | People working in the core area should be periodically tested for the lung diseases and the burden of cost on account of working in the coal mine area. | <p>The SCCL has well-established health centers with qualified doctors & with all facilities as per NIOH, Ahamadabad (occupational health specialist) in each area for monitoring and identification of occupational diseases.</p> <p>Occupational health surveillance programme of the workers (Periodical Medical Examination (PME)) is being carried out in the well established SCCL's hospitals to check the health profile of the workmen i.e. for the lung diseases, hearing impairment, eye testing, heart functioning, hypertension, diabetes, chest X-Ray, complete blood and urine picture, etc. 45 nos. of employees from different categories have been subjected to occupational health check up during last six months. PME details are enclosed as annexure-III.</p> |
| (xxii) | The mining area should be surrounded | The mining area is surrounded by green belt having |

| cond. no. | condition | compliance status |
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| | by green belt having thick closed thick canopy of the tree cover. | <p>closed thick canopy of the tree cover.</p> <p>Plantation is being taken up as per approved EMP with native species at 2500 no. of plants /Ha. So far 7,83,162 nos. of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> |
| (xxiii) | The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation so as to with stand the peak water flow and prevent mine inundation. | <p>An earthen bund was made for 3.0Km length all along the Vattivagu reservoir (dimensions: top width-10m, bottom width-16m & height-3m above the HFL) to with stand the peak water flow and to prevent mine inundation. A toe wall is constructed for a length of 2.0Km along the earthen bund. The slopes of the earthen bund will be stabilized with plantation during the monsoon of the year, 2016.</p> |
| (xxiv) | There shall be no overflow of OB into the river and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project. | <p>OB is being dumped at earmarked external dump sites within ML area as envisaged in the approved EMP.</p> <p>All necessary measures such as preparation of drains around dumps, making of earthen bund around dumps, stabilization of final dump with plantation, etc. are being taken up to prevent overflow of OB into the Vattivagu reservoir and into the agricultural fields.</p> <p>An earthen bund was made for 3.0Km length all along the Vattivagu reservoir (dimensions: top width-10m, bottom width-16m & height-3m above the HFL) to with stand the peak water flow and to prevent mine inundation, and to prevent overflow of OB into the Vattivagu reservoir. A toe wall is constructed for a length of 2.0Km along the earthen bund. The slopes of the earthen bund will be stabilized with plantation during the monsoon of the year, 2016.</p> <p>Garland drain for a length of 3.6Km, deck drains of 2.6 Km length on first deck terrace and 1.9 Km length on second deck terrace were made for proper drainage system for dump-I.</p> <p>Garland drains were also made for a length 2.1Km around dump-II and 2.8Km length around dump-III.</p> <p>Eight siltation ponds of size 30 m x 30 m x 2 m followed by seven check dams were made for dumps to arrest silt and sediment flows from soil.</p> <p>A trench is also provided around the quarry.</p> <p>The garland drains, deck drains, settling ponds, check dams, etc., are being regularly de-silted and maintained</p> |

| cond. no. | condition | compliance status |
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| | | <p>properly.</p> <p>The details of soil erosion control measures are furnished in table-5 of part -II.</p> <p>Plantation is being taken up as per approved EMP with native species at 2500 no. of plants /Ha. So far 7,83,162 nos.of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> |
| (xxv) | <p>OB shall be stacked at four earmarked external OB dumpsite(s) only. The ultimate slope of the dump shall not exceed 28 degrees. Monitoring and management of existing reclaimed dumpsites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forests & Climate Change and its concerned Regional office on yearly basis.</p> | <p>OB is being dumped at three earmarked external dump sites within ML area as envisaged in the approved EMP.</p> <p>The present maximum height of the external dump is 90m with 30m height decks each. The ultimate slope of the dump is being kept less than 28 degrees. Details of topsoil & OB are given in table-2&3 of part-II respectively.</p> <p>Backfilling operations were commenced from January, 2013 and 16.473 M.m³ of OB was backfilled in an area of 70.69Ha. up to 31.03.2016. The present RL of backfilled area is 30m below the surface RL.</p> <p>Plantation is being taken up on dumps after reaching final stage with native species at 2500 no. of plants /Ha. So far 7,83,162 nos.of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> <p>Monitoring and management of existing reclaimed dump sites is being done and shall be continued until the vegetation becomes self-sustaining.</p> <p>The progress and compliance status of the reclamation is being submitted to R.O., Ministry of Environment, Forests & Climate Change, Chennai on half yearly basis as a part of half yearly monitoring report.</p> |
| (xxvi) | <p>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 utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly de-silted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall</p> | <p>Drains were made for a length of 3.6Km around external dump-I, 2.6 Km length on first deck terrace and 1.9 Km length on second deck terrace for proper drainage system for dump-I. Drains were also made for a length 2.1Km around dump-II and 2.8Km length around dump-III.</p> <p>Eight siltation ponds of size 30 m x 30 m x 2 m followed by seven check dams were made for dumps to arrest silt and sediment flows from soil. Trench is made around</p> |

| cond. no. | condition | compliance status |
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| | 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. | <p>the quarry.</p> <p>The garland drains, deck drains, settling ponds, check dams,, etc., are being regularly de-silted and maintained properly.</p> <p>A sump with adequate capacity is made and being maintained by keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. The sump capacity is adequate and the collected rain water is being retained for adequate period for settling of silt.</p> <p>The sump is being cleaned/de-silted every year before entering of monsoon.</p> |
| (xxvii) | 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. | <p>An earthen bund has been provided as a retaining wall. Earthen bunds are designed with dimension of base width 5m, top width 3m and height 3m on the basis of rainfall data at the toe of dump-I for a length of 3.6 Km against 3.6 Km. The earthen bund has been provided in 1st and 2nd decks for dump-I.</p> <p>The earthen bund has been provided for 2.1 Km length around the dump-II and 2.8 Km length around dump-III.</p> |
| (xxviii) | Crushers at the CHP of adequate capacity for the expansion project shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc. | <p>Instead of providing bag filters, effective sensor activated water spraying system has been provided at crusher house of pit head coal handling plant for dust suppression as per condition no.(vi) and parameters (PM₁₀ , PM_{2.5}, SO₂ and NO_x) are within the prescribed limits. A mist sprayer was also provided at pit head CHP for dust suppression.</p> <p>Permanent water sprinkling arrangement was provided around pre-weigh bin and it is working well. A sensor activated wetting point was provided to wet loaded dumpers before unloading into the crushers.</p> <p>A 10 KL capacity water sprinkler is being deployed in every shift for sprinkling water on the internal roads & in the premises of CHP, and along coal transport road from KHG OCP to IB Tandur via. Goleti I & IA, BPA OCP-II. etc.</p> <p>Three nos. of 28 KL & eight nos. of 10 KL capacity water sprinklers are being deployed for dust suppression on haul roads and approach roads, dumps, etc.</p> <p>The coal transport trucks are being covered with tarpaulin before leaving the mine premises and over loading is being prevented.</p> |
| (xxix) | Drills shall be wet operated. Roads shall be metal topped and mechanical | Wet drilling is being practiced. The complete coal transport road was black topped and CC roads were laid |

| cond. no. | condition | compliance status |
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| | sweepers shall be regularly deployed to clear the dust off the main approach and mineral transportation roads. Water sprinkling (fixed and mist type, mobile) shall be regularly done along the main haul roads. | <p>around pit head CHP. A sensor activated wetting point was provided for wetting coal dumpers before unloading into crushers and fixed point water sprinkling system was provided along permanent roads. A mist sprayer was also provided at pit head CHP for dust suppression.</p> <p>Approval has been accorded by the competent authority of SCCL for deploying mechanical sweeper to clear the dust off the main approach and mineral transportation roads and it is under process.</p> <p>At present 48 nos. of project effected persons (PAFs) are being deployed daily for cleaning of coal transport road. A 10 KL capacity water sprinkler is being deployed in every shift for sprinkling water on the internal roads & in the premises of CHP, and along coal transport road from KHG OCP to IB Tandur via. Goleti I & IA, BPA OCP-II. etc.</p> <p>Three nos. of 28 KL & eight nos. of 10 KL capacity water sprinklers are being deployed for dust suppression on haul roads and approach roads, dumps, etc.</p> <p>The coal transport trucks are being covered with tarpaulin before leaving the mine premises and over loading is being prevented.</p> |
| (xxx) | The project authorities shall undertake regular repairing and tarring of roads used for mineral transportation. A 3-tier green belt comprising of a mix of native species shall be developed all along the major approach roads. | <p>The complete coal transport road was black topped and regular repairing and tarring of coal transport is being done by our area civil dept. Green belt comprising of a mix of native species is taken up along the major approach roads.</p> <p>So far 7,83,162 nos.of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> |
| (xxxi) | 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. | <p>Controlled blasting with NONEL (non-electric) technology is being practiced to reduce the ground vibrations and to arrest fly rock, and boulders.</p> <p>The blasting is being carried out only in day time and measures like optimum charge per delay, sequence of blasting, following designed blasting pattern, etc., are being taken to reduce the ground vibrations and to arrest fly rock, and boulders.</p> <p>Ground vibrations monitoring data is furnished in table no.6 of part -II.</p> |
| (xxxii) | A progressive afforestation plan shall be implemented covering an area of 882.29 ha. at the end of mining, which | A progressive afforestation plan is being implemented in project area (on final dumps, along haul roads, in premises of office, CHP, etc.), township area & other |

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| | <p>includes reclaimed External OB dump area (388.57 ha.), Internal OB dump area(261.93 ha.), and Green belt (231.79 ha.) in township located 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. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.</p> | <p>SCCL's lease areas as per approved EMP by planting native species with a density of 2500 plants per Ha. by our forest dept.</p> <p>So far 7,83,162 nos. of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> |
| (xxxiii) | <p>An estimated total 578.49 Mm3 of OB will be generated during the entire life of the mine. Out of which 184.58 Mm3 of OB will be dumped in three external OB in an earmarked area covering 331.75 Ha. of land. 393.91 Mm3 of OB will be dumped in one internal OB Dump in an earmarked area covering 280.98 ha. of land. The maximum height of external OB dump will not exceed 120m (Corrigendum dated 20.01.2016 to this EC was received for max. dump height of 120m).The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MoEF and its Regional Office on yearly basis.</p> | <p>OB is being dumped at earmarked external dump sites within ML area as envisaged in the approved EMP.</p> <p>The present maximum height of the external dump is 90m with each deck height 30m. Dump-III is planned for max. height of 120m. The ultimate slope of the dump is being kept less than 28 degrees. Details of top soil & OB are furnished in table-2 & 3 of part-II respectively.</p> <p>Backfilling operations were commenced from January, 2013 and 16.473 M.m3 of OB was backfilled in an area of 70.69Ha. up to 31.03.2016. The present RL of backfilled area is 30m below the surface RL.</p> <p>Plantation is being taken up on dumps after reaching final stage by planting native species at 2500 no. of plants /Ha. So far 7,83,162 nos.of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> <p>Monitoring and management of existing reclaimed dump sites is being done and shall be continued until the vegetation becomes self-sustaining.</p> <p>The progress and compliance status of the reclamation is being submitted to Ministry of Environment, Forests & Climate Change on half yearly basis as a part of half yearly monitoring report.</p> |
| (xxxiv) | <p>The proponent should prepare restoration and reclamation plan for the degraded area. The land be used in a productive and sustainable manner.</p> | <p>The restoration and reclamation plan envisaged in the approved EMP is being implemented. Backfilling operations were commenced from January, 2013 and 16.473 M.m3 of OB was backfilled in an area of 70.69Ha. up to 31.03.2016. The present RL of backfilled area is 30m below the surface RL.</p> <p>Plantation is being taken up on dumps after reaching</p> |

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| | | final stage by planting native species at 2500 no. of plants /Ha. So far 7,83,162 nos. of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II. |
| (xxxv) | Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land be carried out. | <p>Compensatory Ecological & Restoration of waste land, other degraded land and OB dumps in lieu of breaking open the land is being carried out as per approved EMP. Equivalent extent i.e.140.30Ha. of non-forest land was handed over to Forest Department in Dhanwada & Kistapur villages of Dhanwada (M), Mahaboobnagar District & SCCL has paid an amount of Rs.53,80,000/- to DFO, Mahaboobnagar vide cheque No.076559, dated 08.06.2002 towards Compensatory Afforestation while diversion of 140.30Ha. of forest land as per F.C. Lr.No. 8-102/2000-FC, dated. 10.09.2003.</p> <p>Equivalent extent i.e.29.85 Ha. of non-forest land was handed over to Forest Department, Bellampalli Division in Kistampet and Venkatpalli villages of Tandur Mandal on 16.02.1999 and SCCL deposited Rs.11.84 lakhs with DFO, Bellampalli on 30.03.1999 while diversion of 29.85Ha. of forest land as per F.C. Lr. No. 8-28/94-FC, dated. 28.09.2000.</p> <p>Equivalent extent i.e.126.71 Ha. of non-forest land identified in Sy. nos. 168, 327 & 376 of Jagatpalli village, Peddamandadi (M) of Mahaboobnagar District forms part of 344.72 Ha. handed over to forest department on 20.02.2007 and the said land had been mutated in favor of forest department on 23.02.2007. The SCCL deposited Rs.127.00 lakhs through RTGS mode to the CAMPA account No.3449010070179 of Union Bank of India, New Delhi on 24.05.2010 towards CA while diversion of 126.71Ha. of forest land as per F.C. Lr.No. 8-28/94-FC, dated. 01.07.2011.</p> <p>Plantation was also taken up by SCCL in 57.00Ha. of RF land in consultation with DFO., Bellampalli division.</p> <p>The restoration and reclamation plan envisaged in the approved EMP is being implemented. Back filling operations were commenced from January, 2013 and 16.473 M.m³ of OB was backfilled in an area of 70.69Ha. up to 31.03.2016. The present RL of backfilled area is 30m below the surface RL.</p> <p>A progressive afforestation plan is being implemented in project area (on final dumps, along haul roads, in</p> |

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| | | <p>premises of office, CHP, etc.), township area & other SCCL's lease area as per approved EMP by planting native species with a density of 2500 plants per Ha. by our forest dept.</p> <p>So far 7,83,162 nos. of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> |
| (xxxvi) | The mining should be phased out in sustainable manner. No extra over burden dumps are permitted. | The mining is being done in phased & in sustainable manner and OB dumping is being done in three external dumps as envisaged in EC. Details of overburden management are furnished in table-4 of part-II. No extra over burden dumps are planned for the project. |
| (xxxvii) | No groundwater shall be used for mining operations. | Groundwater is not being used for mining operations. A small quantity of mine discharge water is being used for washing, drinking, fire fighting and dust suppression purpose. Water consumption details are furnished in table -6 of part-II. |
| (xxxviii) | Of the total quarry area of 542.91 ha, the backfilled quarry area of 261.93ha. shall be reclaimed with plantation and a void of 280.98ha. at a depth of 40m which is proposed to be converted into a water body shall be gently sloped and the upper benches shall be terraced and stabilized with plantation /afforestation by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. | <p>The restoration and reclamation plan envisaged in the approved EMP is being implemented. Back filling operations were commenced from January, 2013 and 16.473 M.m³ of OB was backfilled in an area of 70.69Ha. up to 31.03.2016. The present RL of backfilled area is 30m below the surface RL.</p> <p>A progressive afforestation plan is being implemented in project area (on final dumps, along haul roads, in premises of office, CHP, etc.), township area & other SCCL's lease area as per approved EMP by planting native species with a density of 2500 plants per Ha. by our forest dept</p> <p>Plantation is being taken up on dumps after reaching final stage at 2500 no. of plants /Ha. So far 7,83,162 nos. of plants were planted in an area of 229.81Ha.(external dump area- 209.81Ha. and avenue & greenbelt area:20Ha.) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. The plantation details are furnished in table-4 of part-II.</p> |
| (xxxix) | Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new piezometers. 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 | <p>Regular monitoring of ground water levels is being carried out around the project from May, 2004 on long term basis.</p> <p>A monitoring network is established with five nos. of piezometers constructed for the purpose and with 14 nos. of existing open wells. The season wise monitoring is being done and monitoring results are enclosed as annexure-IV of part-II of the report.</p> |

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| | May. Data thus collected shall be submitted to the Ministry of Environment, Forests & Climate Change and the Central Pollution Control Board quarterly within one month of monitoring. | <p>Surface water quality monitoring report is enclosed as annexure-V of part-II of the report.</p> <p>Ground water quality monitoring report is enclosed as annexure-VI of part-II of the report.</p> <p>The piezometric & phreatic levels monitoring data is being submitted to the Ministry of Environment, Forests & Climate Change and the Central Pollution Control Board along with half yearly monitoring reports.</p> |
| (xli) | The company shall put up artificial ground water recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine. | <p>So far no adverse impact on ground water table is observed due to mining operations. The piezometric & phreatic wells monitoring data reveals that there is no adverse impact on ground water due to mining activity.</p> <p>There is a Vattivagu water reservoir near the project with large extent of area and water is available in the reservoir in all seasons.</p> <p>The water collected in mine sump is being pumped out to diverted nallah after retention of water for adequate period and finally into Vattivagu and thus the ground water is being recharged again.</p> <p>Eight nos. of settling ponds and seven nos. of check dams constructed in the project area are also serving the purpose of augmentation of ground water recharging.</p> <p>There is no incidence of drying of wells in nearby villages. However, if village wells go dry due to dewatering of the mine, the project authorities will meet water requirement of nearby villages in future.</p> <p>The season wise piezometric monitoring results are enclosed as annexure-IV of part-II of the report.</p> |
| (xli) | Sewage treatment plant shall be installed in the existing colony. ETP shall also be provided for workshop and CHP wastewater. | <p>Sewage from the colony is being treated through septic tank followed by soak pits.</p> <p>A requisition was submitted for construction of Sewage Treatment Plant (STP) for Goleti township and it is approved by the competent authority. The area civil dept. has taken up the following works for construction of a STP for Goleti Township;</p> <ul style="list-style-type: none"> • Identification of correct location, • Reorganization of all drains of township and • Estimation of total cost for construction of STP for Goleti Township. <p>A STP will be constructed for Goleti township soon.</p> <p>ETP (60KL capacity) was already provided for base workshop and a separate ETP (60KL capacity) for pit</p> |

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| (xlvi) | 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 specialized agency/institution within the District/State and the results reported to this Ministry and to DGMS. | <p>head CHP is constructed.</p> <p>The SCCL has well-established health centers with qualified doctors as per NIOH, Ahamadabad in each area for monitoring and identification of occupational diseases where all facilities have been provided.</p> <p>An area hospital was provided at Bellampalli with qualified doctors, staff and facilities for Bellampalli area and periodical health check up of workmen is being done at regular intervals for occupational diseases and hearing impairment, if any.</p> <p>10% of the workers identified from workforce engaged in active mining operations are being checked up for occupational diseases and hearing impairment. 45 nos. of employees from different categories have been subjected to occupational health check up during last six months.</p> <p>Periodical medical examination details for last six months are enclosed as annexure-II.</p> |
| (xliii) | Land oustees shall be compensated as per the norms laid out R&R Policy of CIL or the National R&R Policy or R&R Policy of the State Government whichever is higher. | <p>This EC was granted for enhancement of annual production of the project from 3.0MTPA to 3.75MTPA only and no further land is involved. R&R was already implemented & R&R (previous) details are enclosed as annexure-VII.</p> |
| (xlii) | For monitoring land use pattern and for post mining land use, a time series of land use 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&CC and its concerned regional office. | <p>Digital processing of entire lease area using remote sensing techniques is being carried out once in three years for monitoring land use pattern.</p> <p>Land use land cover survey was conducted during the year, 2013-2014 and submitted to the MoEF&CC. The land use land cover report is enclosed as annexure-VIII.</p> |
| (xlv) | A detailed Final Mine Closure Plan along with details of Corpus fund shall be submitted to the Ministry of Environment, Forests & Climate Change within 6 months of grant of Environmental clearance. | <p>A mining & mine closure plan along with the corpus fund details as approved by MoC was already submitted along with half yearly reports vide Ir.no.BPA/ENV/R-02/2015/98,dated:23.05.2015.</p> |
| (xlii) | The project authorities shall in consultation with the Panchayats of the local villages and administration identify socio-economic and welfare measures under CSR to be carried out over the balance life of the mine. | <p>The CSR activities are being taken up every year in consultation with the Panchayats of the local villages & administration. The CSR activities are being continued and CSR details are enclosed as annexure-I.</p> |

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| (xlvii) | Corporate Environment Responsibility: | | | | | | | | | | | | | | | | | | | | | | |
| a) | The company shall have a well laid down Environment Policy approved by the Board of Directors. | The SCCL has a well laid down Environment Policy approved by the Board of Directors. The environmental policy of SCCL is available in company's web site i.e. www.scclmines.com . | | | | | | | | | | | | | | | | | | | | | |
| b) | The Environment Policy shall prescribe for standard operating process/procedures to bring into focus any infringements /deviation/ violation of the environmental or forest norms/conditions. | Standard operating procedures to bring into focus any deviation/ violation of the environmental or forest norms/conditions are clearly defined and the status of compliance is being appraised to SCCL Board of Directors once in three months as per Companies Act, 2013. | | | | | | | | | | | | | | | | | | | | | |
| c) | The hierarchical system or administrative order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished. | <p>A unit level Environmental Management Committee has been constituted under the chairmanship of SO to GM. The unit level Environmental Management committee has been constituted with following members.</p> <table border="1"> <tr> <td>1</td> <td>SO to GM</td> <td>chairman</td> </tr> <tr> <td>2</td> <td>Project officer</td> <td>member</td> </tr> <tr> <td>3</td> <td>Area engineer (E&M)</td> <td>member</td> </tr> <tr> <td>4</td> <td>Area civil engineer</td> <td>member</td> </tr> <tr> <td>5</td> <td>Area forest office</td> <td>member</td> </tr> <tr> <td>6</td> <td>Area estates officer</td> <td>member</td> </tr> <tr> <td>7</td> <td>Area env. officer</td> <td>secretary</td> </tr> </table> <p>Apart from the above, a corporate environmental cell is established to monitor and guide in implementation of the environmental safeguards. The minutes of the EMC meeting are enclosed as annexure-IX of part-II of the report. A hierarchical system of reporting of non-compliances has been established and is being implemented in the company.</p> | 1 | SO to GM | chairman | 2 | Project officer | member | 3 | Area engineer (E&M) | member | 4 | Area civil engineer | member | 5 | Area forest office | member | 6 | Area estates officer | member | 7 | Area env. officer | secretary |
| 1 | SO to GM | chairman | | | | | | | | | | | | | | | | | | | | | |
| 2 | Project officer | member | | | | | | | | | | | | | | | | | | | | | |
| 3 | Area engineer (E&M) | member | | | | | | | | | | | | | | | | | | | | | |
| 4 | Area civil engineer | member | | | | | | | | | | | | | | | | | | | | | |
| 5 | Area forest office | member | | | | | | | | | | | | | | | | | | | | | |
| 6 | Area estates officer | member | | | | | | | | | | | | | | | | | | | | | |
| 7 | Area env. officer | secretary | | | | | | | | | | | | | | | | | | | | | |
| d) | To have proper checks and balance, the company shall 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. | The company has a well laid down system of reporting of non-compliances /violations of environmental norms to the Board of Directors of the company and shareholders as well as status of compliance of other laws, rules, etc. once in three months under Companies Act, 2013. | | | | | | | | | | | | | | | | | | | | | |

4B: GENERAL CONDITIONS:

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| (i) | No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment, Forests & Climate Change. | There is no change in mining technology and shovel - dumper combination is the technology being adopted in the project. |
| (ii) | No Change in the calendar plan of production for quantum of mineral coal | The year wise coal production figures are within the prescribed limit i.e. as specified in EC (3.75MTPA). |

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| | shall be made. | The year wise coal and OB excavation details are furnished in table-1 of part-II . |
| (iii) | Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for PM ₁₀ , PM _{2.5} , SO ₂ and NOx monitoring. 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, etc carried out at least once in six months. | <p>As per the new guidelines, ambient air quality parameters such as PM₁₀, PM_{2.5}, SO₂ and NOx are being monitored at four locations in buffer zone and two locations in core zone periodically. The location of the stations has been decided in consultation with the State Pollution Control Board by considering meteorological data, topographical features and environmentally and ecologically sensitive targets. A continuous ambient air quality online monitoring station was established at project i.e.in core zone and data is being displayed through display board and is being recorded at project site.</p> <p>The monitoring work is being carried out regularly by the external agency i.e. "Environmental Protection Training and Research Institute" (EPTRI), Hyderabad which is CPCB recognized & a NABL accredited lab.</p> <p>The parameters PM₁₀ , PM_{2.5}, SO₂ and NOx are being monitored once in fortnight and heavy metals such as Hg, As, Ni, Cd, Cr, etc., are being monitored once in six months.</p> <p>The details of monitoring stations, micro-meteorological data & various air pollution control measures being taken up are furnished in table-8 of part-II of the report.</p> |
| (iv) | Data on ambient air quality (PM ₁₀ , PM _{2.5} , SO ₂ and NOx) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EPA rules, 1986 shall be furnished as part of compliance report. | <p>Data on ambient air quality (PM₁₀, PM_{2.5}, SO₂ and NOx) and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data is being regularly submitted to the Ministry including its concerned Regional Office and to the State Pollution Control Board once in six months.</p> <p>The ambient air quality & heavy metals monitoring data are enclosed as annexure-X & XI of part-II respectively.</p> <p>SCCL entrusted the work of environmental monitoring in all the mining areas to EPTRI, a CPCB recognized and NABL accredited laboratory. EPTRI is periodically participating in the proficiency testing conducted by CPCB and their performance in such tests is being verified to ensure quality work.</p> |
| (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 | Adequate measures are being taken for control of noise levels below 85 dBA in the work environment. Sound proof cabins are provided in HEMM except dozers & graders where there is design constraint |

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| | of HEMM, etc., shall be provided with ear plugs/muffs. | <p>and these operators are being provided with ear-muffs.</p> <p>Planned preventive maintenance & engine tuning of the HEMM is being carried out to control the vehicular noise.</p> <p>The various measures being taken up for control of noise levels below 85 dBA in the work environment are furnished in table-9 of part-II.</p> <p>The persons engaged in high noise work environment such as drilling and blasting operations are being provided with earplugs. 96 nos. of ear plugs are issued for last six months.</p> <p>Noise levels monitoring data is enclosed as annexure-VIII.</p> |
| (vi) | Industrial waste water (workshop and waste water from the mine) shall 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 shall be installed before discharge of workshop effluents. | <p>An ETP (60KL capacity) was already provided for base workshop and a separate ETP (60KL capacity) is constructed for pit head CHP.</p> <p>Periodical monitoring of effluents is being carried out to ensure compliance to prescribed standards before discharging into natural water course.</p> <p>The effluents are conforming to the prescribed standards and monitoring report is enclosed as annexure-XIII of part-II of the report.</p> |
| (vii) | Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded. | <p>Vehicular emissions are being kept under control by taking up periodic planned preventive maintenance of the vehicles and vehicular exhaust emissions are being monitored regularly. The vehicular emissions monitoring results are enclosed as annexure-XIV of part-II of the report.</p> <p>Vehicles used for coal transportation are being optimally loaded and covered with tarpaulin.</p> |
| (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 analyzed through a laboratory recognized under EPA Rules, 1986. | <p>Post project environmental monitoring work is being carried out by an external agency, i.e. "Environmental Protection Training and Research Institute" (EPTRI), Hyderabad which is a CPCB recognized & NABL accredited lab.</p> <p>A regional environmental laboratory for Bellampalli region was commissioned with all facilities at Mandamarri for monitoring of critical parameters.</p> |
| (ix) | Personal 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. | Protective wear like dust respirators or dust masks are being provided to workmen exposed to dusty environment periodically and the adequate training is being imparted on safety and health aspects at the Mine Vocational Training Center provided in the area. |

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| | | <p>76 nos. of dust respirators were issued during last six months.</p> <p>99 nos. of persons were given training on safety and health aspects at mine vocational training centre during last year.</p> <p>Details of dust respirators & ear plugs (issued) and Mine Vocational Training are enclosed as annexure-II of part-II.</p> | | | | | | | | | | | | |
| (x) | <p>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 and records maintained thereof. The quality of Environment due to outsourcing and the health and safety issues of the outsourced manpower should be addressed by the company while outsourcing.</p> | <p>Occupational health surveillance programme of the workers (Periodically Medical Examination (PME)) is being carried out in the well established SCCL's hospitals to check over the health profile of the workmen and records are being maintained. 45 nos. of employees from different categories have been subjected to occupational health check up during last six months. PME details are enclosed as annexure-III.</p> <p>The quality of environment due to outsourcing, the health, and safety issues of the outsourced manpower are being addressed by the company while awarding the work to the contractor and compliance status of terms & conditions of the work order (including environment, health & safety issues) is being monitored regularly by project safety officer and off-loading in charge officer.</p> | | | | | | | | | | | | |
| (xi) | <p>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.</p> | <p>A company level environment cell with qualified personnel headed by GM(ENV) is established to monitor and guide in implementation of the environmental safeguards.</p> <p>An area level environmental cell headed by qualified environmental officer is established and functioning under the control of area General Manager to monitor and guide in implementation of the environmental safeguards.</p> <p>Apart from this, a unit level Environmental Management Committee with multi disciplinary team has been constituted under the chairmanship of SO to GM.</p> <p>The unit level Environmental Management committee has been constituted with following members.</p> <table border="1"> <tr> <td>1</td><td>SO to GM</td><td>chairman</td></tr> <tr> <td>2</td><td>Project officer</td><td>member</td></tr> <tr> <td>3</td><td>Area engineer (E&M)</td><td>member</td></tr> <tr> <td>4</td><td>Area civil engineer</td><td>member</td></tr> </table> | 1 | SO to GM | chairman | 2 | Project officer | member | 3 | Area engineer (E&M) | member | 4 | Area civil engineer | member |
| 1 | SO to GM | chairman | | | | | | | | | | | | |
| 2 | Project officer | member | | | | | | | | | | | | |
| 3 | Area engineer (E&M) | member | | | | | | | | | | | | |
| 4 | Area civil engineer | member | | | | | | | | | | | | |

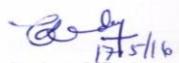
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| | | 5 | Area forest office | member |
| | | 6 | Area estates officer | member |
| | | 7 | Area env. officer | secretary |
| | | The minutes of the EMC meeting are enclosed as annexure-IX of part-II of the report. | | |
| (xii) | The funds earmarked 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 concerned regional office. | The funds earmarked for the environmental safeguards are being kept in separate account and are being spent for environmental protection works only. | The year wise environmental expenditure is being submitted along with half yearly reports to the ministry and its regional office of MoEF&CC. | The details of environment expenditure are enclosed as annexure-XV of part-II of the report. |
| (xiii) | 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 & Climate Change at http://envfor.nic.in . | Advertised in widely circulated two local daily news papers i.e. in "AndhraJyothi" (Telugu) & in "The Hindu" (English), dated: 06.03.2015. | A copy of the Environmental Clearance letter has been marked to the Member Secretary, T.S.P.C.B., Hyderabad, vide Ir.no.BPA/ENV/G-06/2015/ 30, dated: 21.02.2015. | |
| (xiv) | A copy of the Environmental clearance letter shall be marked to concern Panchayat/Zilla 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 company's website. | This condition has been complied by marking a copy to the concerned vide Ir.no.BPA/ENV/G-06/2015/30, dated: 21.02.2015. | The Environmental Clearance letter has been displayed on company's website i.e. www.scclmines.com . | |
| (xv) | A copy of the environmental clearance letter shall also 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 Sector and Collector's officer/ Tehasildar's Office for 30 days. | This condition has been complied vide Ir.no.BPA/ENV/G-06/2015/30, dated: 21.02.2015. | | |
| (xvi) | The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated environmental | The Environmental Clearance letter has been displayed on company's website i.e. www.scclmines.com . | | |

| cnd. no. | condition | compliance status |
|----------|---|--|
| | clearance 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 public domain. The monitoring data of environmental quality parameter (air, water, noise and soil) and critical pollutant such as PM ₁₀ , PM _{2.5} , SO ₂ and NOx (ambient) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mine office and in corporate office and on company's website. | The compliance status of the stipulated environmental clearance conditions is being updated once in every six months and updated half yearly monitoring report is being uploaded once every six months on company's website i.e. www.scclmines.com , so as to bring the same in public domain. The monitoring data of environmental quality parameters (air, water & noise) and critical pollutants such as PM ₁₀ , PM _{2.5} , SO ₂ and NOx (ambient) and critical sectoral parameters are being displayed at the entrance of the project premises and mine office and in corporate office and on company's website i.e. www.scclmines.com . |
| (xvii) | The project proponent shall submit six monthly compliance reports on status of compliance of the stipulated Environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the Ministry, respective Zonal Officer's of CPCB and the SPCB. | The updated half yearly monitoring reports on status of compliance of the stipulated Environmental Clearance conditions is being submitted (both in hard copy and in e-mail) once in every six months to the respective Regional Office of the Ministry, respective Zonal Officer's of CPCB and the SPCB. |
| (xviii) | The Regional office of this Ministry located in the Region 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. | Agreed to this condition. The project authority is extending full cooperation to the office (s) of the regional office by furnishing the requisite data / information / monitoring reports. |
| (xix) | The Environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent for 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&CC by e-mail. | The Environmental Statement for each financial year ending 31st March in Form-V is being submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently. The Environmental Statement in Form-V is being uploaded on the company's website i.e. www.scclmines.com , along with the status of compliance of EC conditions and is being submitted to the respective Regional Offices of the MoEF & CC by e-mail once in every six months. |
| 5 | The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report so also during their presentation to the EAC. | All commitments and recommendations made in the EIA / EMP report are being complied. |
| 6 | The commitment made by the Proponent to the issue raised during Public Hearing | This EC was granted for enhancement of annual production of the project from 3.0MTPA to 3.75MTPA |

| cnd. no. | condition | compliance status | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---|--|----------|------|-------------|--|---|----------------|----------|----------|---|----------------|---------------------|--------|---|---------------------|------------|--------|---|---------------------|------------------|--------|---|-----------------|-------------------|--------|---|--------------------|--------------------------|--------|
| | shall be implemented by the Proponent. | <p>only and there is no change in land requirement. So, public hearing is not required and not conducted.</p> <p>The compliance of the commitment made by the proponent to the issues raised during earlier public is enclosed as annexure-XV.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | The Proponent is required to obtain all necessary clearance/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. | <p>The project expansion operations has been started after obtaining all necessary clearance /approvals (CFE order no.02/TSPCB /CFE/RO-NZM/HO/ 2015 / 693, dt:04.11.2015 & Consent Order No: TSPCB/ PTN/NZB/46/HO/W&A/2015/446, dated: 09.06 . 2015 with annual capacity of 3.0MTPA. It is valid up to 30th September, 2017.An application has been submitted to TSPCB for issuing CFO expansion order with 3.75MTPA capacity vide lr.no.: BPA/ ENV / C-05/2016/12, dt: 13.01.2016. It is under process.</p> <p>If any further condition is stipulated by the ministry or by any other competent authority for environmental protection, the same will be obeyed & complied.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | The Ministry or any other competent authority may stipulate any further condition for environmental protection. | Agreed to this condition. If any further condition is stipulated by the ministry or by any other competent authority for environmental protection, the same will be obeyed & complied. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | The Proponent shall setup an Environment Audit cell with responsibility and accountability to ensure implementation of all the EC conditions. | <p>An area level environment audit cell is setup with the following members under the chairmanship of SO to GM of area.</p> <table border="1"> <thead> <tr> <th>Sl.</th> <th>Name</th> <th>Designation</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Sri.K.Kondaiah</td> <td>SO to GM</td> <td>Chairman</td> </tr> <tr> <td>2</td> <td>Sri.M.Rama Rao</td> <td>Area Engineer (E&M)</td> <td>member</td> </tr> <tr> <td>3</td> <td>Sri.CH.Rama Krishna</td> <td>DGM(Civil)</td> <td>member</td> </tr> <tr> <td>4</td> <td>Sri.K.Krishna chary</td> <td>Area env.officer</td> <td>member</td> </tr> <tr> <td>5</td> <td>Sri.Raman Reddy</td> <td>Dy.Mgr.(Forestry)</td> <td>member</td> </tr> <tr> <td>6</td> <td>Sri.S.Kranti kumar</td> <td>Jr.Accounts Officer(JAO)</td> <td>member</td> </tr> </tbody> </table> <p>The above audit cell will meet once in every year to audit the condition wise compliance status of all the EC conditions. The above audit committee will prepare an env.audit report and advise further course of action to be initiated by project authority for compliance of any condition(s) of the EC.</p> | Sl. | Name | Designation | | 1 | Sri.K.Kondaiah | SO to GM | Chairman | 2 | Sri.M.Rama Rao | Area Engineer (E&M) | member | 3 | Sri.CH.Rama Krishna | DGM(Civil) | member | 4 | Sri.K.Krishna chary | Area env.officer | member | 5 | Sri.Raman Reddy | Dy.Mgr.(Forestry) | member | 6 | Sri.S.Kranti kumar | Jr.Accounts Officer(JAO) | member |
| Sl. | Name | Designation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Sri.K.Kondaiah | SO to GM | Chairman | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Sri.M.Rama Rao | Area Engineer (E&M) | member | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Sri.CH.Rama Krishna | DGM(Civil) | member | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Sri.K.Krishna chary | Area env.officer | member | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Sri.Raman Reddy | Dy.Mgr.(Forestry) | member | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Sri.S.Kranti kumar | Jr.Accounts Officer(JAO) | member | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, | Agreed to this condition. The actual data is being submitted. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| cond. no. | condition | compliance status |
|-----------|--|--|
| 11 | 1986. 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 and any other orders passed by the Hon'ble Supreme Court of India/ High Courts and any other Court of Law relating to the subject matter. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of ground water and surface water, and occupational and other diseases due to the mining operations. | Agreed to this condition. All measures are being taken to avoid soil contamination, contamination of ground water and surface water, and occupational and other diseases due to the mining operations. |
| 12 | Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010. | Agreed to this condition. |
| 13 | This EC supersedes the earlier EC vide letter no. J-11015/36/2003-IA. II(M) dated 16.09.2004 for at a rated capacity of 0.72 MTPA in a lease area of 338.78 ha. and environmental clearance vide MoEF letter No. J-11015/689/2007-IA-II(M), dt. 22.10.2007 for expansion in rated capacity from 0.72 MTPA to 2.5 MTPA with a peak production of 3 MTPA and increase in lease area from 338.78 ha. to 1217.50 ha. | Agreed to this condition. |

A periodic progress report regarding environmental protection measures is enclosed as part - II.


17/5/16
Project Officer,
Khairagura OC Expan. Project,
Bellampalli area.

PART – II

Post project environmental monitoring data & other reports of Khairagura opencast expansion coal mine project, Bellampalli area for the period October,2015 to March,2016.

1. Production details:

| Sl. No | Year | Coal (in MT) | | OB (in Mm ³) | |
|--------|---------|--------------|--------|--------------------------|--------|
| | | As per EC | Actual | As per EMP | Actual |
| 1 | 2007-08 | 3.00 | 1.40 | 10.42 | 0.53 |
| 2 | 2008-09 | | 1.85 | 7.88 | 10.17 |
| 3 | 2009-10 | | 2.50 | 14.61 | 14.58 |
| 4 | 2010-11 | | 2.62 | 18.24 | 10.91 |
| 5 | 2011-12 | | 2.65 | 17.27 | 13.79 |
| 6 | 2012-13 | | 2.26 | 21.60 | 10.61 |
| 7 | 2013-14 | 3.75 | 2.97 | 44.06 | 19.49 |
| 8 | 2014-15 | | 2.714 | 45.37 | 28.46 |
| 9 | 2015-16 | | 3.371 | 47.24 | 24.71 |

2. Topsoil management :

| | | | |
|---|---------------------------------------|---|-------------------------|
| 1 | Total topsoil | : | 10.860 M.m ³ |
| 2 | Topsoil removed so far | : | 05.937 M.m ³ |
| 3 | Topsoil stored in temporary stockyard | : | 02.242 M.m ³ |
| 4 | Topsoil spread on dumps | : | 03.695 M.m ³ |
| 5 | Topsoil removed in last six months | : | 00.366 M.m ³ |

3. Overburden management:

| External dumping | | | | | |
|--------------------------------|--|--|--|----------------------------|---------------|
| 1 | Total hard overburden | 573.91 M.m ³ (excluding topsoil) | | | |
| 2 | Total hard OB removed since inception | 144.402 M.m ³ (excluding topsoil) | | | |
| 3 | Total hard OB removed during last six months | 13.762 M.m ³ (excluding topsoil) | | | |
| 4 | Details of OB dumps | Area (in Ha.) | Quantity in (M.m ³) | Height (m) | Overall slope |
| a | Dump-I (external) | 63.38 | 27.160 | 90 | 28° |
| b | Dump-II(external) | 64.22 | 20.323 | 60 | 28° |
| c | Dump-III A(Sushee) (external) | 83.92 | 30.000 | 60 | 28° |
| d | Dump-III B (BGR) (external) | 61.25 | 24.284 | 60 | 28° |
| Internal dumping (backfilling) | | | | | |
| 1 | Details of internal dump (backfilling) | 70.69 | 16.473 against 16.060 M.m ³ as planned up to 2015-2016 as per approved EMP. | 30 mtr. below ground level | - |

4. Plantation:

| | | |
|---|--|-----|
| 1 | No of plants planted during last six months. | nil |
| 2 | Area covered in Ha. during last six | nil |

| | | |
|----|---|---|
| | months. | |
| 3 | Expenditure incurred in Rs.lakhs during last six months | nil |
| 4 | Total area brought under plantation so far in Ha. | 229.81Ha. (external dump area- 209.81Ha. and avenue & greenbelt area: 20Ha.(including avenue plantation along road from Khairagura arch to Khairagura project 12.00Ha.)) against 291.55Ha. as planned up to 31.03.2018 as per approved EMP. |
| 5 | Total no. of plants planted so far since inception. | 7,83,162 plants |
| 6 | Species of plants planted. | Bamboo, Hardwickia binata, Albezia odoratissima, Dolichidron crispa, F.bengalensis, F.religiosa, F.carica, Aegle marmelos, Emblica officinalis, Feronia limoni, Ceiba pentandra, Terminalia bellarica, T.chebula, Writia tinctoria, Pterocarpus marsupium, Eucalyptus clones. |
| 7 | Seeds sown during last six months. | nil |
| 8 | Seeds sown so far. | 5746Kg |
| 9 | Small plants planted so far. | 60 plants around project office. |
| 10 | Total expenditure in Rs.lakhs. | 16.84 |

Note: Plantation plan with year wise plantation details is enclosed.

5. Soil erosion control measures:

| | | |
|---|----------------|--|
| 1 | Toe walls | Earthen bund was provided for 10.5Km length for dumps and 2.1Km length CC toe-wall was provided for Vattivagu protection bund. |
| 2 | Garland drains | Garland drain was provided for 10.5Km length for dumps. |
| 3 | Settling ponds | 8 nos. |
| 4 | Check dams | Seven nos. of CC check dams were constructed. |

6. Ground vibrations monitoring data:

Ground vibrations monitoring data is as follows;

| Date | Location/distance from blasting site(in m) | PPV (in mm/sec.) | Air pressure (in dBL) | Remarks |
|------------------|--|-------------------|-----------------------|---------|
| 13.10.2015 | 870/700m | 2.73 | 114 | - |
| 15.11.2015 | 890/600m | 0.25 | 100 | - |
| 25.12.2015 | 930/600m | 0.06 | - | - |
| 02.01.2016 | 860/800m | 1.20 | <100 | - |
| 22.02.2016 | 840/600m | 2.54 | - | - |
| 31.03.2016 | 900/600m | 0.31 | 100 | - |
| Permitted limits | on dam, etc. | ≤2mm/sec. | ≤135dBL | |
| | Other structures | ≤10mm/sec. | ≤135dBL | |

7. Water balance statement:

The average water utilization per day for different purposes at Khairagura OC expan. project is given below:

| Sl | Description | Quantity in KLD |
|----|--|-----------------|
| 1 | Average quantity of water pumped out of the mine | 7370 |
| 2 | Water used for dust suppression | 1158 |
| 3 | Water used for drinking/bathing and other industrial | 132 |

| | | |
|----|---|---|
| | requirement | |
| 4 | Water used for washing of HEMM | 46 |
| 5 | Water used for plantation | 102 |
| 6 | Water used for fire fighting | 75 |
| 7 | Excess water let out | 5857 |
| 8 | Total water consumption | 1513(as per CFO:1940) |
| 9 | Point of discharge of effluents (as per CFO). | i) Treated washings: Reused for dust suppression & cleaning purpose (2550 KLD). ii) Domestic: Septic tank followed by soak pit (22 KLD). |
| 10 | Discharge quantity as per Consent from TSPCB | 2572 |

8. Ambient air quality monitoring:

a. Micro-meteorological monitoring:

Micro-meteorological station was installed at GM's Office, Goleti, Bellampalli Area. The summary of the meteorological monitoring data during last six months is as follows:

| Sl. | Parameter | Min. | Max. | Mean |
|-----|--|-----------------|------|-------|
| 1. | Temperature (°C) | 9.9 | 42.5 | 27.47 |
| 2. | Wind speed (Km/hr) | (calm%)63.81 | 7.5 | 0.63 |
| 3. | Relative humidity (%) | 7.7 | 97.2 | 50.65 |
| 4 | Predominant wind direction for the entire study period | | SE | |
| 5 | Total rainfall (in mm) | 949(at project) | | |

b. Air quality monitoring:

The ambient air quality monitoring data for last six months period is enclosed as annexure-X.

The summary of the ambient air quality monitoring data during last six months is as follows:

| Location | Distance | PM ₁₀ | | | |
|------------------------------|---------------------|-------------------|--------|---------|----------|
| | | Min. | Max. | 98%tile | Standard |
| Khg OC Exp. Project (CA4) | Core Zone | 174.0 | 247.5 | 246.88 | 250 |
| Pathibanda village(BA10) | Buffer Zone 2.0Km) | 66.1 | 91.9 | 90.92 | 100 |
| Goverguda village (BA8) | Buffer Zone (450m) | 88.0 | *124.8 | *123.98 | 100 |
| Ullipitta dorli village(BA9) | Buffer Zone (1.7Km) | 80.1 | *119.0 | *114.8 | 100 |
| Chopidi village(BA7) | Buffer Zone | 84.1 | *112.9 | *111.68 | 100 |
| Location | Distance | PM _{2.5} | | | |
| | | Min. | Max. | 98%tile | Standard |
| Khg OC Exp Project(CA4) | Core Zone | 79.3 | 107.1 | 103.76 | - |
| Pathibanda village(BA10) | Buffer Zone 2.0Km) | 41.2 | *62.0 | 59.94 | 60 |
| Goverguda village(BA8) | Buffer Zone (450m) | 45.0 | *66.8 | *65.9 | 60 |
| Ullipitta dorli village(BA9) | Buffer Zone (1.7Km) | 44.3 | *62.4 | *62.28 | 60 |
| Chopidi village(BA7) | Buffer Zone | 42.4 | *68.6 | *67.42 | 60 |
| Location | Distance | SO ₂ | | | |
| | | Min. | Max. | 98%tile | Standard |
| Khg OC Exp Project(CA4) | Core Zone | 10.8 | 16.6 | 16.22 | 120 |
| Pathibanda village(BA10) | Buffer Zone 2.0Km) | 10.0 | 14.0 | 13.88 | 80 |
| Goverguda village(BA8) | Buffer Zone (450m) | 8.4 | 14.3 | 14.3 | 80 |
| Ullipitta dorli village(BA9) | Buffer Zone (1.7Km) | 9.5 | 13.7 | 13.7 | 80 |

| | | | | | |
|------------------------------|---------------------|-----------------|------|---------|-----|
| Chopidi village(BA7) | Buffer Zone | 9.8 | 15.4 | 15.02 | 80 |
| Location | Distance | NO _x | | | |
| | | Min. | Max. | 98%tile | STD |
| Khg OC Exp Project(CA4) | Core Zone | 17.5 | 34.6 | 33.16 | 120 |
| Pathibanda village(BA10) | Buffer Zone 2.0Km) | 13.1 | 29.8 | 28.9 | 80 |
| Goverguda village(BA8) | Buffer Zone (450m) | 12.2 | 29.0 | 27.9 | 80 |
| Ullipitta Dorli village(BA9) | Buffer Zone (1.7Km) | 15.9 | 28.7 | 28.34 | 80 |
| Chopidi village(BA7) | Buffer Zone | 16.3 | 30.4 | 29.34 | 80 |

*A separate 10KL capacity water sprinkler is being deployed for water sprinkling along coal transport road and resurfacing of coal transport road is in progress. -No standard for core zone.

c. Air pollution control measures:

As the opencast mining operations involve fugitive dust generation, the following measures are being taken up in the project to prevent/control dust generation and air pollution:

1. Three nos. of 28 KL capacity & eight nos, of 10KL capacity water sprinklers have been deployed for dust suppression on haul roads, dump yards, etc. A 10 KL, capacity hired water sprinkler is being deployed for water sprinkling along coal transport road from KHG OCP to IB Tandur via. Goleti I & IA, BPA OCP-II.
2. The 12 Km long and 7m wide double road leading to Khairagura expansion project from Goleti Township was black topped. 2.125 Km road was widened from Chopidi village to Khairagura OC Expan. Project's check post.
3. The permanent roads, like road to the pit head coal handling plant, permanent internal roads at site office, etc., were black topped.
4. Vehicular emissions are being monitored for HEMM at a frequency of once in six months and the vehicles not meeting the stipulated norms are being subjected to further maintenance. Regular maintenance of the vehicles is being carried out to control fuel exhaust emissions.
5. Effective dust suppression measures are being taken at pit head coal handling plant. The crusher house, conveyors, transfer points, discharge hoppers, etc, are enclosed with G.I. sheets to the extent possible to control the dust generation.
6. Automatic water spraying arrangement was provided by using photo sensors at crushers. A sensor operated wetting point is provided to wet loaded coal transport dumpers.
7. Pre-weigh truck dispatch system is provided at this project, so that the handling of the coal is minimum during dispatch.
8. The wet drilling is being adopted.
9. Controlled blasting technique with NONELs is being practiced for effective blasting and to control the generation of dust during blasting operation.
10. Post-project air quality monitoring is being carried out by an external agency i.e. M/s Environment Protection Training & Research Institute (EPTRI) which is CPCB recognized & NABL accredited lab as per the frequencies stipulated by MoEF&CC for coal mining industry and all the necessary precautions are being taken to maintain the concentration of critical parameters well within the stipulated standards. A regional lab was established by EPTRI with all required facilities at Mandamarri area for Bellampalli region for monitoring of critical parameters in the field.
11. Six nos. of Ambient Air Quality (AAQ) monitoring stations, two at core zone and four at buffer zones were identified in consultation with Regional office, TSPCB, Nizamabad. The air quality monitoring

results are enclosed as annexure-X. The Ambient Air Quality (AAQ) monitoring stations are given below;

| Sl. | Station | Zone |
|-----|-----------------------------|---------------------|
| 1 | KHA OC Expan. Project(CA4) | Core Zone |
| 2 | CAAQMS | Core Zone |
| 3 | Pathibanda village(BA10) | Buffer Zone 2.0Km) |
| 4 | Goverguda village(BA8) | Buffer Zone (450m) |
| 5 | Ulipitta Dorli village(BA9) | Buffer Zone (1.7Km) |
| 6 | Chopidi village(BA7) | Buffer Zone |

9. Noise levels monitoring:

a. Monitoring data: The summary of noise quality monitoring data for last six months is as follows;

| Location | Core / Buffer zone | Day Time | | | |
|---------------------------------------|--------------------|------------|------|---------|----------|
| | | Min. | Max. | 98%tile | Standard |
| Khairagura OC site office (CN4) | Core | 60.6 | 72.8 | 72.6 | 75 |
| Rehabilitated Goverguda village (BN8) | Buffer | 48.2 | 53.9 | 53.8 | 75 |
| Chopri Village (BN7) | Buffer | 48.8 | 54.6 | 54.5 | 55 |
| Ulipitta village (BN9) | Buffer | 46.9 | 54.1 | 53.9 | 55 |
| Pathibanda village(BN10) | Buffer | 46.8 | 54.4 | 54.3 | 55 |
| Location | | Night Time | | | |
| | | Min. | Max. | 98%tile | Standard |
| Khairagura OC site office (CN4). | Core | 50.7 | 66.5 | 65.9 | 70 |
| Rehabilitated Goverguda village(BN8) | Buffer | 36.7 | 44.9 | 44.8 | 45 |
| Chopri Village (BN7) | Buffer | 41.9 | 44.9 | 44.8 | 45 |
| Ulipitta village(BN9) | Buffer | 32.8 | 44.9 | 44.8 | 45 |
| Pathibanda village(BN10) | Buffer | 33.0 | 44.6 | 44.6 | 45 |

The post project noise monitoring data for last six months is enclosed as annexure – XII.

b. Noise pollution control measures:

1. Noise levels recorded at different locations in and around the project are under the prescribed standards.
2. Sound proof cabins are provided in the HEMM for except dozer & grader.
3. Monitoring of noise level is being done regularly and record is being maintained.
4. Plantation is being carried out on dumps, in the vacant places, avenue and around boundary to reduce the noise levels.
5. Planned preventive maintenance of noise generating machinery including transport vehicles is being done.
6. Protective devices like acoustic wool, earplugs/ear muffs, etc. have been provided for the workers exposed to noise levels above 90 dB(A).
7. Workers are being subjected to occupational health surveillance periodically.
8. Speed limits have been fixed at 20 km/hr. for HEMM to control the excessive noise created by dumpers and other vehicles.
9. Regular fine tuning of engines is being done to reduce vehicular emissions and for reduction of noise.

10. In order to control impact of noise due to the operation of screen chutes, always some coal is being left available to reduce the height of fall and direct hitting to the sides of the chute.
11. The noise level arising due to blasting operation is for a very limited period. Design of optimum blast hole geometry by considering bench height, diameter of hole, type of explosive, nature of rock, level of fragmentation required, etc.
12. Total charge per blast is divided into several parts so as to keep minimum explosive per delay.
13. Plaster shooting is avoided to the extent possible to reduce air shock wave. NONELS are being used to control ground vibrations.

10. Surface water quality monitoring:

Monitoring data: The post project surface water quality monitoring data for last six months is enclosed as annexure-V.

11. Groundwater quality monitoring:

Monitoring data: The post project ground water quality monitoring data for last six months is enclosed as annexure-VI.

12. Effluents quality monitoring :

The summary of the effluents quality monitoring data during last six months is as follows:

| Location | Latitude & Longitude | PH | | | |
|--|------------------------------|---------------------|------|---------|------------|
| | | Min. | Max. | 98%tile | STD |
| Khairaguda expansion OCP mine discharge (EW4) | N19° 14' 5.6" E 79° 17' 5.8" | 7.2 | 7.8 | 7.8 | 5.5 to 9.0 |
| Khairaguda expansion OCP base workshop ETP outlet (EW5). | N19° 14' 7.1" E 79° 17' 2.2" | 7.3 | 7.8 | 7.8 | 5.5 to 9.0 |
| Location | Latitude & Longitude | TSS (mg/l) | | | |
| | | Min. | Max. | 98%tile | STD |
| Khairaguda expansion OCP mine discharge(EW4) | N19° 14' 5.6" E 79° 17' 5.8" | 13.0 | 22.0 | 21.6 | 100 |
| Khairaguda expansion OCP base workshop ETP outlet(EW5). | N19° 14' 7.1" E 79° 17' 2.2" | 12.0 | 28.0 | 26.9 | 100 |
| Location | Latitude & Longitude | COD (mg/l) | | | |
| | | Min. | Max. | 98%tile | STD |
| Khairaguda expansion OCP mine discharge (EW4) | N19° 14' 5.6" E 79° 17' 5.8" | 10.0 | 21.0 | 20.8 | 250 |
| Khairaguda expansion OCP base workshop ETP outlet (EW5). | N19° 14' 7.1" E 79° 17' 2.2" | 10.0 | 41.0 | 38.6 | 250 |
| Location | Latitude & Longitude | Oil & Grease (mg/l) | | | |
| | | Min. | Max. | 98%tile | STD |
| Khairaguda expansion OCP mine discharge (EW4) | N19° 14' 5.6" E 79° 17' 5.8" | <1 | <1 | <1 | 10 |
| Khairaguda expansion OCP base workshop ETP outlet (EW5). | N19° 14' 7.1" E 79° 17' 2.2" | <1 | 1.4 | 1.4 | 10 |

Water pollution control measures:

1. The washing effluents generated from washing platform of the workshop are being treated in Effluent Treatment Plant provided for the purpose and let out water is being utilized for plantation and dust suppression. A separate ETP for CHP is constructed.

2. Excess water after necessary treatment in sedimentation tank is being discharged into natural drains leading to Vattivagu.
3. Sewage from township is being collected and treated in septic tanks followed by soak pits. Requisition for sewage treatment plant for Goleti township was submitted and it is under consideration.
4. Construction of a separate ETP for coal handling plant is under progress.
5. Garland drains (dim: base width 3m, top width 10m, depth 3m) around the quarry and external dumps are provided with settling ponds followed by check dams to settle the run off soil during rains.
6. Seven nos. of check dams were constructed for dumps.
7. An earthen bund (base width 5m, top width 3m, height 3m) is provided around the external dump to check the run off into the natural drains.
8. Piezometric monitoring data is enclosed as annexure-IV of part-II of the report.
9. Post-project water quality monitoring is being carried out by an external agency i.e. Environment Protection & Research Institute/HYD (EPTRI) which is CPCB recognized & a NABL accredited lab as per the frequencies stipulated by MoEF&CC for coal mining industry and all the necessary precautions are being taken to maintain the concentration of critical parameters well within the stipulated standards. The monitoring results of surface & ground water quality at these locations are enclosed as annexure-V&VI of part-II respectively.

13. Phreatic surface monitoring: (range of water table):

The piezometric & phreatic monitoring data is enclosed as annexure-IV.

14. Capital and revenue expenditure incurred on environment management and pollution control measures:

Expenditure towards environmental protection for last six months is enclosed as annexure- XV.

15. Socio-economic measures:

- a) R & R plan has already been implemented. They have been provided with roads, water, electricity, community hall, residential facility, etc.
- b) Rehabilitation of Borjam, New Borjam, Arjuguda, Lingiguda, S.C.Colony, Nambaiah colony, Chanduguda & Khairaguda villages is also completed as per the guidelines of the state government.
- c) A central colony over a non-coal bearing area has been provided. It has been provided with facilities like schools, transports, clubs, post office, market places, etc.
- d) Workmen are encouraged to undergo family planning operations by giving cash incentives, leave, etc.
- e) Regular vaccination for polio, DPT, Measles and BCG are being given at Area Hospital and dispensaries.
- f) The sports activity is being encouraged among workmen & at R&R centers by arranging playing courts for out-doors and In-door games. Inter area competitions are being conducted annually. Play article were provided to the children at R&R centers.
- g) Environmental awareness programmes like quiz, essay and elocution competitions are being conducted every year in all mines, departments for employees and officers, house wives in Colonies and school's children of Schools in the area, to bring awareness on environment protection (i.e. conservation of water, power, waste management, pollution and preventive measures from time to time and winners are being encouraged with prizes).
- h) Environment slogans in English and Telugu languages are being distributed to mines and departments for display at their premises.

- i) Posters with pictures on Bio-medical waste disposal are distributed to Hospitals for display at conspicuous places for awareness & for implementation.
- j) The employee's welfare programmes such as i.e. "Meekosam - Mee Chentaku" , for improving facilities in employees colonies and "Meekosam - Mee Aarogyam Kosam" for better health of employees by specialists from corporate hospitals, Hyderabad was organized at all areas of SCCL.
- k) Free Mobile Medical Van (SPANDANA) is provided daily with qualified doctor , medical staff and medical facilities such as X-Ray, E.C.G. Spiro analyzer, blood test, urine test, etc. for medical checkup & treatment of people of surrounding villages & people of R&R centers in Bellampalli area.
- l) Fruit bearing and shady plants are being issued to schools, Forest dept., villagers, etc., at free of cost from SCCL's Goleti nursery.
- m) Several vocational training programmes are being organized to un-employed youth, PDFs by Singareni Seva Samithi.
- n) Free medical camps are being organized in surrounding villages of the projects & R&R centers by SCCL every year.
- o) Free conveyance (buses) facility was provided to all employees (for all shifts) to attend their duties from Goleti township to KHA OC Expan. project & Dorli OCPs-I&II.
- p) SCCL has agreed to sanction an amount of 31.394 crores for the development of Tiriyani Mandal and in 1st phase an amount of Rs.7.90 crores has been sanctioned to undertake roads and community Health Centers in Tiriyani Mandal and same amount was deposited with District Collector, Adilabad. The SCCL will deposit the balance amount after certification of other works by the District Collector ,Adilabad.
- q) "Telanganaku Harita Haram" programme was conducted at Madaram and Goleti CHP and massive plantation was taken up to improve greenery.
- r) "Swachha Bharath" programme was conducted at Goleti village.
- s) "Yoga & Dhyanam" programmes are being conducted at regular intervals for employees, their family members & villagers at Goleti and Madaram villages.
- t) Usage of polythene covers less than 50 microns size was banned at mines & depts.meetings, Goleti guest house, clubs at Bellampalli area.
- u) The employee's welfare programmes such as i.e. "Meekosam - Mee Chentaku" , for improving facilities in employees colonies and "Meekosam - Mee Aarogyam Kosam" for better health of employees by specialists from corporate hospitals, Hyderabad was organized at all areas of SCCL.

16. Civil expenditure for environmental protection works is enclosed as annexure- XV(b).

17. Plantation details of all projects & other vacant areas of Bellampalli area are enclosed as annexure-XVII.

18. Plantation plan showing year wise plantation details is enclosed as annexure-XVIII.


 Project officer,
 Kharaguda opencast expansion project,
 Bellampalli Area.