



भारत सरकार
GOVERNMENT OF INDIA
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE
CHANGE

Regional Office (WCZ)
Ground Floor, East Wing
New Secretariat Building
Civil Lines, Nagpur 440001.
apccfcentral-ngp-mef@gov.in

File No: EC-274/RON/2017- NGP/ ~~5230~~ 5230

Date: 15.04.2019

To

The Member Secretary,
Director, IA Division (Thermal),
Ministry of Environment Forest and Climate Change,
Indira Paryavaran Bhawan,
Aliganj, Jorbagh Road,
New Delhi-110003

Subject: :1x 500 MW Coal Based Expansion Project at Khaperkheda Thermal Power Station at Khaperkheda, Nagpur, Maharashtra by M/s Maharashtra state Power Generation Co. Ltd.

Ref: MoEF&CC file no. 1. J-13011/12/2005-IA-II (T), dated. 02.06.2006

Sir,

The undersigned is directed to invite your kind attention on the above subject and letters under reference wherein MoEF&CC granted Environment clearance to M/s Maharashtra state Power Generation Co. Ltd, Khaperkheda, Nagpur, Maharashtra for 1x 500 MW Coal Based Expansion Project at Khaperkheda Thermal Power Station. In this connection, a random site visit has been carried out by undersigned on 30.01.2019 along with officers of user agency to monitor the status of compliance stipulated in the Environment Clearance.

The following observations have been made during the site visit.

- M/s Maharashtra state Power Generation Co. Ltd has been accorded environment clearance for 1x 500 MW Coal Based Expansion Project within the existing installed capacity of 840 MW (4x210).
- No forest land were involved, No R&R activities were involved for this unit.
- PP has obtained Consent to establish vide letter no. BO/RO(P&P)/CC-150 dated 17.01.2006 and Consent to operate (Renewal) vide letter no. BO/EIC No. NG-1519/CAC-CELL/CAC-2805 dated 25.02.2016 from MPCB. MPCB yet to grant the renewal of CTO.

- PP has obtained EC prior to issue of EIA notifications dated 14.09.2006. It was observed that few conditions related to implementations CSR activities, HDPE lining for ash pond, installation of STP were not reflected in the EC conditions.

The following Non compliance and Partial compliance were observed during site inspection.

NON COMPLIANCES

Condition no. v: PP did not submit COC monitoring report.

Condition no. xvii: Management of fugitive emissions was not satisfactory. Fugitive emissions were high at approaching road, internal road, boiler area and coal handling area and other working premises. PP need to take necessary action plan to control fugitive emission and submit the same to the Ministry.

Condition no. xx: PP did not submit six monthly compliance reports to Regional office Ministry regularly.

Condition no. vi: PP did not achieve 100% ash utilization.

Condition no. vii: As submitted by, ash content of the coal was between 38% to 42 % which above permissible limits.

PARTIAL COMPLIANCES

Condition no. i: PP has applied for renewal of CTO for this unit to MPCB as it was expired on 25.02.2016.

Condition no.ii & xi: This project has 5 units (i.e., 4x210MW and 1x500MW). As per the report submitted by PP, SPM level of unit 5 (1x500MW) were within permissible limits forwhich environment clearance obtained from MoEF&CC. PP has informed that SPM level of Unit 1 and Unit 2 were exceeded permissible limits (220 mg/Nm³ outlet dust) due to ESP design and poor coal quality. Retrofitting of ESP for Unit-1 & Unit-2 to be done.

Condition no. viii: Ground water recharge pit have been provided. However, detailed plan and approval from CGWA were not submitted.

Condition no. xii: PP need to monitor ground water quality near ash pond area

Condition no. xiii: Plantation carried out was not satisfactory. PP need to carry out three tier plantation either side of approaching road, around the coal handling plant, railway siding and along the internal roads.

Condition no. xv: Noise levels exceeded permissible limit at compressor area, turbine area, PA fan, FD Fan area, GS Pump house and other areas of plant. Further, it was observed that few of the workers who are working near boiler area were not provided mask and ear plugs.

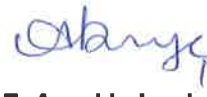
Condition no. xii&xvi: PP did not submit half yearly compliance report regularly.

Condition no. xviii: Advertisement was made. However clause of seven days was not followed.

Condition xix: As submitted by PP, Separate environment monitoring cell were provided. This environment cell has adequate qualified staffs from Chemistry, Electrical, Civil and Mechanical background. Representation from environment background is necessary to manage environment issues effectively.

This issues with the approval of ADG(Central), MoEF&CC (WCZ), Nagpur

Yours faithfully


15/4/19

Dr. E. Arockia Lenin
(Scientist C)

Copy to

1. Director, Monitoring cell, MoEF&CC, New Delhi.
2. The Chief General Manager (CEHSU), M/s Maharashtra state Power Generation Co. Ltd (with the request to submit Action Taken Report against Monitoring report)
3. Guard File


15/4/19

Dr. E. Arockia Lenin
(Scientist C)

DESPATCHED
16/04/2019

MONITORING REPORT
DATA SHEET

1.	Project type: River - valley/ Mining / Industry / Thermal / Nuclear / Other (specify)		Thermal Industry
2.	Name of the project		1 x 500 MW Coal based expansion project at Khaperkheda Thermal power Station at Khaperkheda, Nagpur, Maharashtra.
3.	Clearance letter (s) / OM No. and Date		Letter No. J-13011/12/2006-IA-II (T), dtd. 27.11.2006
4.	Location		
	a.	District (S)	Nagpur
	b.	State (S)	Maharashtra
	c.	Latitude	21°385381
	d.	Longitude	78°920216
5.	Address for correspondence		Chief Engineer (O&M), M.S.P.G.C.L., Khaperkheda TPS, Khaperkheda, Teh- Saoner, Dist- Nagpur PIN - 441102
	a.	Address of Concerned Project Chief Engineer (with pin code & Telephone / telex / fax numbers	
	b.	Address of Executive Project: Engineer/Manager (with pincode/ Fax numbers)	
6.	Salient features		
	a.	of the project	Coal based 500 MW Thermal Power Station
	b.	of the environmental management plans	<ul style="list-style-type: none"> ✓ ESPs is provided ✓ Adequate Stack Height provided ✓ ETP with RO & STP provided ✓ Air Emission Management & Online Monitoring ✓ AAQ (MoEF approved Agency) & CAAQMS Monitoring ✓ Recycle/Reuse of ETP, STP & Ash Bund Water ✓ Effluent Quality Monitoring by MoEF approved Agency & Online Monitors ✓ Dry Fly Ash Collection (Silos) & High Concentration Slurry Disposal (Geho Pumps) ✓ Ash Management ✓ Greenbelt Development ✓ Water Conservation
7.	Break up of the project area		
	a.	submergence area forest & non-forest	Not applicable
	b.	Others	
8.	Break up of the project affected Population with enumeration of Those losing houses/dwelling units Only		Not applicable

	agricultural land only, both Dwelling units & agricultural Land & landless labourers/artisan	
	a. SC, ST/Adivasis	Not applicable
	b. Others (Please indicate whether these Figures are based on any scientific And systematic survey carried out Or only provisional figures, it a Survey is carried out give details And years of survey)	Not applicable
9.	Financial details	
	a. Project cost as originally planned and subsequent revised estimates and the year of price reference	
	b. Allocation made for environmental management plans with item wise and year wise Break-up.	
	c. Benefit cost ratio/Internal rate of Return and the year of assessment	
	d. Whether (c) includes the Cost of environmental management as shown in the above.	Yes
	e. Actual expenditure incurred on the project so far.	3615.85 Crore (Upto March-2018)
	f. Actual expenditure incurred on the environmental management plans so far	
10.	Forest land requirement	
	a. The status of approval for diversion of forest land for non-forestry use	Not applicable
	b. The status of clearing felling	Not applicable
	c. The status of compensatory afforestation, it any	Not applicable
	d. Comments on the viability & sustainability of compensatory afforestation program in the light of actual field experience so far	Not applicable
11.	The status of clear felling in Non-forest areas (such as submergence area of reservoir, approach roads), it any with quantitative information	Not applicable
12.	Status of construction	

	a.	Date of commencement (Actual and/or planned)	03.07.2007 (Boiler Foundation Start)
	b.	Date of completion (Actual and/of planned)	16.04.2012 (Date of Commercial Operation)
13.	Reasons for the delay if the Project is yet to start		Not applicable
14	Dates of site visits		
	a.	The dates on which the project was monitored by the Regional Office on previous Occasions, if any	-
	b.	Date of site visit for this monitoring report	30.01.2019
15.	Details of correspondence with Project authorities for obtaining Action plans/information on Status of compliance to safeguards Other than the routine letters for Logistic support for site visits)		-

COMPLIANCE STATUS IN DETAIL

Subject: 1x 500 MW Coal Based Expansion Project at Khaperkheda Thermal Power Station at Khaperkheda, Nagpur, Maharashtra by M/s Maharashtra state Power Generation Co. Ltd

Reference: MoEF&CC Clearance EC J-13011/24/2005-IA.II(T) dated 02.06.2006

S.No	CONDITIONS	STATUS OF COMPLIANCE
i.	All the conditions stipulated by MPCB vide letter no. BO/RO(P&P)/TB/CC-150 dated 17.01.2006 shall be strictly implemented.	Partly Complied It was observed that PP has obtained Consent to establish vide letter no. BO/RO(P&P)/CC-150 dated 17.01.2006 and Consent to operate vide letter no. BO/EIC No. NG-1519/CAC-CELL/CAC-2805 dated 25.02.2016 from MPCB. Further, It is noted that PP has applied for renewal of CTO for this unit to MPCB as it was expired on 25.02.2016. PP did not receive CTO so far (Annexure 1) .
ii.	No additional land to be acquired.	Complied PP has informed that additional land were not acquired for this project. The land of existing unit (3 x 30 MW) were utilized for this project
iii.	Particulate emission for the Existing Unit shall be brought down within 150 mg/Nm ³ by December, 2006 and in case of the New Units, it shall be limited to 50 mg/Nm ³	Partly complied It was observed that this project has 5 units (i.e., 4x210MW and 1x500MW). MoEF&CC has accorded Environment clearance for 500MW (1x500MW) vide letter no. J-13011/24/2005-IA.II(T). As per the report submitted by PP, SPM level of unit 5 (1x500MW) were within permissible limits . Further, PP has informed that SPM levels of Unit 1 and Unit 2 were exceeded permissible limits (220 mg/Nm ³ outlet dust) due to ESP design and poor coal quality. Retrofitting of ESP for Unit-1 & Unit-2 is under process.
iv.	Low Nox burners shall be installed to reduce the NOx emission.	Complied It was informed that Over Fire Air (OFA) were

		provided to reduce NOX emission. As per the report the NOX levels were within permissible limits (Annexure 2).
v.	COC of not less than 4 shall be adopted.	Not Complied PP did not submit COC monitoring report.
vi.	Ash shall be collected in dry form only and disposed in the form of High concentration slurry. 100% fly ash utilization shall be achieved within 9 years in accordance with the notification. S.O.763(E) dated 14.9.1999 and the amendments made therein from time to time.	Not Complied Dry Ash Silos and High Concentration Slurry Disposal System were provided. It was observed that PP did not achieve 100% ash utilization. PP needs to achieve 100% fly ash utilization as submitted in the action plan (Annexure-3).
vii.	Ash content in coal to be used as fuel shall not exceed 34%.	Not complied PP has informed that present ash content of the coal was between 38% to 42 % which was due to nature of coal supplied from M/s WCL, SECL, SECL & MCL.
viii.	Rain water harvesting shall be practiced. A detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with Central Ground Water Authority/State Ground Water Board and a copy of the same shall be submitted within three months to the Ministry.	Partly Complied Ground water recharge pit have been provided. However, detailed plan and approval from CGWA were not submitted.
ix.	The treated effluents conforming to the prescribed standards shall be recirculated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon.	Complied ETP with capacity of 400 m ³ /hr has been installed along with Reverse Osmosis (RO) plant with capacity of 100 m ³ /hr. The capacity of trade effluent sump was 800 m ³ /hr. Effluents from Cooling tower and other industrial sources were treated in ETP and reused in cooling tower, ash disposal and sprinkling purposes.
x.	A single flue stack of 275 m with exit velocity of not less than 20 m/sec shall be installed with continuous online monitoring system.	Complied Stack with 275 m height was provided. Exit gas velocity maintained little above 20 m/sec. PP needs to take necessary action and submit to the

		Ministry for further action. Further, Online Opacity Meter, SOx and NOx analyzer were provided. As per the report submitted by PP, the SOX and NOX levels were within permissible limits.
xii.	ESP with an efficiency of 99.9% shall be installed to limit particulate emission within 50 mg/Nm ³ . Automatic system for shutting down the power plant in the event of non-functioning of ESPs shall be installed	Partly Complied PP has informed that ESP has been provided with 72 fields with Efficiency 99.9%. As per the report the emission level withing permissible limits. PP need to rectify and improve the standards ESP of unit 1 and 2.
xii.	Regular monitoring of ground water in and around the plant and the ash pond area shall be carried out, records maintained and six monthly reports should be submitted to the Regional office of the Ministry at Bhopal.	Partly Complied Regular monitoring of ground water carried out on quarterly basis at five locations. i.e, 1. Suradevei well, 2. Meshram house, 3. Bina, 4. Kawatha and 5. Gajbhiya house. As per the report, The total dissolved solids and Total hardness at Meshram location were exeeded than permissible limits. (Annexure-4) . Further, PP did not monitor ground water quality near ash pond area. Therefore, it is dircted that PP need to take an action plan to improve the ground water quality level and submit the same to the Ministry for further action.
xiii.	Greenbelt of 50 meter width shall be developed all around power plant & ash pond area. One third (1/3) of total plant area shall be covered by greenbelt.	Partly Complied PP has informed that green belt under plantation about 60.57% and total number trees planted around 182690 up to 2017. Plantation of 4300 (approx) bamboo trees along the periphery of ash bund were taken up in collaboration with Maharashtra Bamboo Development Board (Annexure-5) . However, it was observed that greenbelt of 50 meter width were not covered around the plant and ash pond. Growth rate of planations were not satisfactory in few areas. Therefore, It is reccommended that PP need to

		start three tier plantations either side of approaching road, around the coal handling plant, railway siding and along the internal roads.
xiv.	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied First aid, sanitation facility, drinking water, toilets were provided and found to be satisfactory
xv.	Leq of noise level should be limited to 75 DBA. For people working in the high noise areas, personal protection devices like ear plugs etc. shall be provided.	Partly Complied As per the report submitted by PP, noise levels were exceeded 75 dBA at compressor area, turbine area, PA fan, FD Fan area, GS Pumb house and other areas of plant (Annexure 6). Further, it was observed that few of the workers who are working near boiler area were not provided mask and ear plugs.
xvi.	Regular monitoring of the ambient air quality shall be carried out in and around the power plant. Records maintained and six monthly report should be submitted to the Regional office of this ministry at Bopal.	Partly Complied PP has informed that regular ambient air quality monitoring were carried out twice in a week at five locations. PP did not submit half yearly compliance report regularly.
xvii.	For controlling fugitive dust, regular sprinkling of water in coal handling and other vulnerable areas of the plant shall be ensured. Dust arresters and dust suppression systems shall be provided.	Not complied It was observed that managment of fugitive emissions were not satisfactory. Fugitive emissions were high at approaching road, internal road, boiler area and coal handling area and other working premises. It is reccommned to comply the following, <ol style="list-style-type: none"> 1. House keeping needs to be improved boiler area,internal roads, approaching roads 2. All internal roads needs to be black topped/cemented propoerly, 3. Sprinkling needs to be done regularly. 4. Plantations to be done either side of the roads,

xviii.	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the state pollution control board/committe and may also be seen at website of the ministry of environment forest at http://envfor.nic.in .	<p>Partly Complied</p> <p>Advertiesment was made. However clause of seven days was not followed.</p>
xix.	A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.	<p>Partly complied</p> <p>As submitted by PP, Separate environment monitoring cell were provided. This environment cell has adequate qualified staff from Chemistry, Electrical, Civil and Mechanical background. Representation from environment background is necessary to monitor environment issues effectively.</p>
xx.	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards should be submitted the Ministry/RegionalOffice/CPCB/SPCB.	<p>Not complied</p> <p>PP has submitted monitoring report to MPCB. However, PP did not submit six monthly compliance report to Regional office Ministry regularly.</p>
xxi.	Regional Office of the MoEF&CC located at Bhopal will monitor the implementation of the stipulated conditions. Coplete set of Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted to MoEF from time to time hould be forwarded to the Regional Office for their use during monitoring.	<p>PP has agreed to abide by thise condition</p>
xxii.	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise breakup.	<p>Complied</p> <p>It was informed that separate account head and fund were allocated for implementation of</p>

	<p>This cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purposes and yearwise expenditure should be reported to the Ministry.</p>	<p>environmental protection measures. The amount were incurred towards Water cess, MPCB JVS Monitoring, Consent fee, Water pollution abatement, air pollution abatement, Ash slurry disposal, green plant, hazardous waste disposal and bio-medical waste collection. The year wise expenditure submitted by PP is given below</p> <table border="1"> <thead> <tr> <th>S.No.</th><th>Year</th><th>Amount (in Lakhs)</th></tr> </thead> <tbody> <tr> <td>1</td><td>2015-2016</td><td>462.69</td></tr> <tr> <td>2</td><td>2016-2017</td><td>506.37</td></tr> <tr> <td>3</td><td>2017-2018</td><td>506.37</td></tr> </tbody> </table> <p>It is recommended that PP need to allocate budget towards the following to fulfill the environment clearance.</p> <ol style="list-style-type: none"> 1. Improving efficiency of ESP for Unit I and II 2. Controlling fugitive emissions by improving roads, water tankers trucks& sprinklers, 3. Updating technology for STP 4. Updating technology for Rainwater harvesting system 5. Covering more areas for plantation. 	S.No.	Year	Amount (in Lakhs)	1	2015-2016	462.69	2	2016-2017	506.37	3	2017-2018	506.37
S.No.	Year	Amount (in Lakhs)												
1	2015-2016	462.69												
2	2016-2017	506.37												
3	2017-2018	506.37												
xxiii.	<p>Full cooperation should be extended to the scientists / officers from the Ministry/ Regional office of Ministry/CPCB/SPCB who would be monitoring the compliance of environmental status.</p>	<p>PP has agreed to abide by these conditions</p>												

Dr. E. Arockia Lenin
(Scientist C)

SUMMARY NOTE

M/s Maharashtra state Power Generation Co. Ltd has been accorded environment clearance for 1x 500 MW Coal Based Expansion Project within the existing installed capacity of 840 MW (4x210). It was observed that PP has obtained EC prior to issue of EIA notifications dated 14.09.2006. No forest land were involved, No R&R activities were involved for this unit. In this connection, a random site visit has been carried out on 30.01.2019 along with officers of user agency to monitor the status of compliances stipulated in the Environment Clearance. The following observations have been made during the site visit.

The following Non compliance and Partial compliance were observed during site inspection.

NON COMPLIANCES

- Condition no. v: PP did not submit COC monitoring report.
- Condition no. xvii: Management of fugitive emissions was not satisfactory. Fugitive emissions were high at approaching road, internal road, boiler area and coal handling area and other working premises. PP need to take necessary action plan to control fugitive emission and submit the same to the Ministry.
- Condition no. xx: PP did not submit six monthly compliance reports to Regional office Ministry regularly.
- Condition no. vi: PP did not achieve 100% ash utilization.
- Condition no. vii: As submitted by, ash content of the coal was between 38% to 42 % which above permissible limits.

PARTIAL COMPLIANCES

- Condition no. i: PP has applied for renewal of CTO for this unit to MPCB as it was expired on 25.02.2016.
- Condition no.ii & xi: This project has 5 units (i.e., 4x210MW and 1x500MW). As per the report submitted by PP, SPM level of unit 5 (1x500MW) were within permissible limits for which environment clearance obtained from MoEF&CC. PP has informed that SPM level of Unit 1 and Unit 2 were exceeded permissible limits (220 mg/Nm³ outlet dust) due to ESP design and poor coal quality. Retrofitting of ESP for Unit-1 & Unit-2 to be done.
- Condition no. viii: Ground water recharge pit have been provided. However, detailed plan and approval from CGWA were not submitted.

- Condition no. xii: PP need to monitor ground water quality near ash pond area
- Condition no. xiii: Plantation carried out was not satisfactory. PP need to carry out three tier plantation either side of approaching road, around the coal handling plant, railway siding and along the internal roads.
- Condition no. xv: Noise levels exceeded permissible limit at compressor area, turbine area, PA fan, FD Fan area, GS Pump house and other areas of plant. Further, it was observed that few of the workers who are working near boiler area were not provided mask and ear plugs.
- Condition no. xii&xvi: PP did not submit half yearly compliance report regularly.
- Condition no. xviii: Advertisement was made. However clause of seven days was not followed.
- Condition xix: As submitted by PP, Separate environment monitoring cell were provided. This environment cell has adequate qualified staffs from Chemistry, Electrical, Civil and Mechanical background. Representation from environment background is necessary to manage environment issues effectively.
 - As submitted by PP, No court cases and show cause notices are pending against M/s Maharashtra state Power Generation Co. Ltd, Khaperkheda, Nagpur.
 - PP has obtained Consent to establish vide letter no. BO/RO(P&P)/CC-150 dated 17.01.2006 and Consent to operate vide letter no. BO/EIC No. NG-1519/CAC-CELL/CAC-2805 dated 25.02.2016 from MPCB. PP has to renew CTO for this unit, as it was expired on 25.02.2016.



महाराष्ट्र प्रदूषण नियंत्रण मंडळ

Application

ure - 1

Industries

Industry Documents | Logout

Decision of CAC for your application as on meeting 11-12-2017

It was decided to grant renewal of consent to operate to Power Generating Unit- 500 MW by imposing following conditions:-

1. PP shall submit the Bank Guarantee as per BG regime.
2. PP shall install Continuous Ambient Air Quality Monitoring System within 06 months period i.e. Up to 30.06.2018.
3. Industry shall either make the agreement with coal washeries or shall provide own washeries to get the blended/ beneficiated coal with ash content less than 34% and submit the BG of Rs. 10 lakh towards compliance of the same.

Consent shall be issued after receipt of BG compliance report from SRO along with latest JVS results accordingly, proportionate BG will be forfeited, if non-compliance reported and after submission of additional requisite consent fee.

MAHARASHTRA POLLUTION CONTROL BOARD

Phone : 4010437/4020781
/4037124/4035273
Fax : 24044532/4024068 /4023516
Email : enquiry@mpcb.gov.in
Visit At : <http://mpcb.gov.in>



Kalpataru Point, 3rd & 4th floor, Sion- Matunga
Scheme Road No. 8, Opp. Cine Planet Cinema, Near
Sion Circle, Sion (E),
Mumbai - 400 022

Consent order No: - BO/EIC No.NG-1519-15/CAC-CELL/CAC-2805

Date- 25/02/2016

To,
M/s. Maharashtra State Power Generation Co. Ltd.
Khaperkheda Thermal Power Station.
(500MW x 01 No.), Unit No. - V,
At- Khaperkheda, Ta- Saoner Dist - Nagpur.

Subject: Renewal of Consent to Operate under RED category.

Ref : 1. Earlier Consent granted vide no. BO/EIC No.NG-11373-14/CAC-CELL/CAC- 911
dtd-28.01.2015 valid upto 31.08.2015.
2. Minutes of CAC meeting held on 02.02.2016

Your application: CO1508000330

Dated: 28.02.2015.

For: Renewal of Consent to Operate
under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under
Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization
under Rule 5 of the Hazardous Wastes (M, H & T M) Rules 2008 is considered and the
consent is hereby granted subject to the following terms and conditions and as detailed in
the schedule I, II, III & IV annexed to this order:

1. The consent is granted for a period from 01.09.2015 to 31.08.2016.
2. The actual capital investment of the industry is Rs. 3428.81 Crores. (As per C. A. Certificate submitted by industry)

3. The Consent is valid for the manufacture of -

Sr. No.	Product / By-Product Name	Maximum Quantity in MT/A
1.	Electricity Generation (Coal based Power generation)	1 x 500 MW

4. Conditions under Water (P&CP), 1974 Act for discharge of effluent:

Sr. no.	Description	Permitted quantity of discharge (CMD)	Standards to be achieved	Disposal
1.	Trade effluent	7600 m ³ /Day	As per Schedule -I	Recycle / Reuse
2.	Domestic effluent	60 m ³ /Day	As per Schedule -I	Recycle / Reuse

5. Conditions under Air (P& CP) Act, 1981 for air emissions:

Sr. no.	Description of stack / source	Number of Stack	Standards to be achieved
1.	Boiler	1	As per Schedule -II

6. Conditions about Non Hazardous Wastes:

Sr. no.	Type Of Waste	Quantity & UoM	Treatment	Disposal
1.	Fly Ash / Bottom Ash	94,400 MT/Month	---	Shall be send to Cement Manufacture. Dispose as per Govt. of India Guidelines Notification vide No. SO 763 (E) dated 14.09.1999.

Conditions under Hazardous Waste (MH & TM) Rules, 2008 for treatment and disposal of hazardous waste:

Sr. No.	Type Of Waste	Category	Quantity	UOM	Treat Disposal ent
1	Used Oil/Spent Oil	5.1	5.01	KL/Year	-- Sale to authorized reprocessor
2	Chemical Sludge from waste water treatment	34.3	10.0	MT/Year	--
3	Polythene Bags / Discarded HDPE Bags	33.3	5.0	MT/Year	--
4	Wastes / residue containing oil (Waste grease / oil contaminate cotton waste)	34.2	1.0	KL/Year	-- CHWTSDF, Eutibori, Nagpur

- The Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
- Industry shall promote adoption of clean coal (with ash content less than 34%) and clean power generation technologies and comply with the notification issued by MoEF for utilization of fly ash from coal or lignite based thermal power plants dated 14th September, 1999 and as amended on 3rd November, 2009.
- This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government authorities.

For and on behalf of the
Maharashtra Pollution Control Board

(Dr. P Anbalagan, IAS)
Member Secretary

Received Consent fee of -

Sr. No.	Amount(Rs.)	DD. No.	Date	Drawn On
1.	68,57,632 /-	123929	01.08.2015	Dena Bank

Copy to:

- Regional Officer Nagpur, MPCB .
- Sub-Regional Officer- Nagpur-I, MPCB - They are directed to ensure the compliance of the consent conditions.
- Chief Accounts Officer, MPCB, Mumbai.
- CC/CAC desk- for record & website updation purposes.

Schedule-I

Terms & conditions for compliance of Water Pollution Control:

- 1) A] As per your application, you have provided the Effluent Treatment Plant (ETP) with the design capacity of 400 CMD / hr.
- B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent.

Sr No.	Parameters	Standards prescribed by Board
I.	Condenser cooling Water	Limiting Concentration in mg/l, except for pH
01	pH	Between 6.5 to 8.5
02	Temperature	Not to exceed 5°C. than that of intake water temp.
03	Free available chlorine	Not to exceed 0.5 mg/l
II.	Boiler Blow Down	
01	Suspended Solids	Not to exceed 100mg/l
02	Oil & Grease	Not to exceed 10mg/l
03	Copper (Total)	Not to exceed 1mg/l
04	Iron (Total)	Not to exceed 1mg/l
III.	Cooling Tower Blow Down	
1	Free available chlorine	Not to exceed 0.5mg/l
2	Zinc	Not to exceed 1mg/l
3	Chromium (Total)	Not to exceed 0.2mg/l
4	Phosphate	Not to exceed 5mg/l
IV	D.M. Plant Effluent	
1	pH	Between 5.5 to 9
2	Suspended Solids	Not to exceed 100mg/l
3	Oil & Grease	Not to exceed 10mg/l
4	BOD 3 days	Not to exceed 30mg/l
5	COD	Not to exceed 250mg/l
5	TDS	Not to exceed 2100mg/l

C) The treated effluent shall maximum Recycled/Reused for Ash handling, coal handling, dust suppression & remaining on land of 29.65 acres for gardening.

- 2) A.] As per your consent application, you have provided the sewage treatment system with the design capacity of STP 2.5 M3/Hr and STP-II 2.5 M3/Hr.

B] The Applicant shall operate the sewage treatment system to treat the sewage so as to achieve the following standards/ prescribed under EP Act, 1986 and Rules made there under from time to time, whichever is stringent.

- | | | | | |
|-----|-------------------|---------------|-----|-------|
| (1) | Suspended Solids. | Not to exceed | 50 | mg/l. |
| (2) | BOD 3 days 27°C. | Not to exceed | 30 | mg/l. |
| (3) | COD. | Not to exceed | 100 | mg/l. |

C] The treated sewage shall be disposed on land of 29.65 acres for gardening/irrigation/

- 3) The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or and extension or addition thereto.
- 4) The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.
- 5) The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 and as amended, by installing water meters, filing water cess returns in Form-I and other provisions as contained in the said act.

Sr. no.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Industrial Cooling, spraying in mine pits or boiler feed	39,300 m ³ /day
2.	Domestic purpose	150 m ³ /day
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	4,560 m ³ /day
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	---

- 6) The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.

Schedule-II

Terms & conditions for compliance of Air Pollution Control:

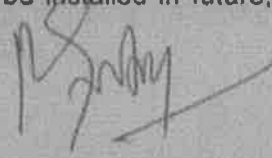
1. As per your application, you have provided the Air pollution control (APC) system and also erected following stack (s) and to observe the following fuel pattern-

Sr. No.	Stack Attached To	APC System	Height in Mtrs.	Type of Fuel	Quantity & UoM	S %	SO ₂ Kg/Day
1	Boilers	ESP	275	Coal	7759 MT/Day	0.4%	62072
				Furnace Oil	7.9 KL/day	4.5%	711
				LDO	1.98 KL/day	1.8%	71.28

2. The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time / Environmental Clearance / CREP guidelines. (Concern section shall mention specific control equipments)
3. The applicant shall operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards:

Particulate matter	Not to exceed	50 mg/Nm ³
--------------------	---------------	-----------------------

4. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.
5. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
6. Control Equipments:
- Electrostatic Precipitator of sufficient capacity provided to each Boiler and any other sources of particulate matter shall be operate and maintain so as to ensure that TPM emission do not exceed 50 mg/Nm³.
 - Dust collection system and automatic water sprinkler system provided to Coal Handling Plant shall be operate and maintain continuously.
 - Dust collector of sufficient capacity provided to coal crusher and any other sources of SPM shall operate and maintain continuously.
 - There shall not be any fugitive emission from coal storage yard.
 - The industry shall make necessary provisions for installing FGD with 90 % efficiency in its design and layout ad sufficient floor space so that it can be installed in future, as & when directed by Board.



Schedule-III
Details of Bank Guarantees

Forfeited BG History

Sr. No.	Consent (C to E/O/R)	Amt of BG Imposed	Amt of BG forfeited from BG imposed	Purpose of BG Forfeiture
1.	C to R (Already forfeited)	Rs. 25 Lakhs	Rs. 12.5 Lakhs	As JVS reports of stack of are exceeding the consented limit

Existing top up & extension BG details

Sr. No.	Consent (C to E/O/R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C to R (Existing to be Extended & top up)	Out of Rs. 25/- Lakhs Rs. 12.5/- Lakhs remaining Rs. 12.5/- Lakhs to be extended & top up 25/- Lakhs to be obtained to make= Total BG of Rs. 37.5/- Lakhs	15 Days	Towards Operation and Maintenance of Air Pollution Control Devices to achieve emission standards.	31.08.2016	31.12.2016

Existing BG's to be extended

Sr. No.	BG Code	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
	PNCI			Handling and disposal of flyash		
1	PNCIa	5/- Lakhs	15 Days	To switch over to 100% usable dry fly ash collection and storage	Continuous	31.12.2016
2	PNCIb	1/- Lakh	15 Days	Towards utilization of flyash as per flyash notification 1999.	Continuous	31.12.2016
3	PNCIc	1/- Lakh	15 Days	Towards Mitigation of seepages from wet fly ash conveying system	Continuous	31.12.2016
4	PNCId	1/- Lakh	15 Days	Towards Scientific operation of ash pond i.e. uniform distribution of wet slurry in the pond so as to have minimum depth of water	Continuous	31.12.2016

5	PNC1e	1/- Lakh	15 Days	Towards Providing arrangement for reuse of 100% seepage water, arising from ash pond, for ash slurry	Continuous	31.12.2016
6	PNC1e	5/- Lakhs	15 Days	Towards Scientific closure of abandoned ash pond with soil cover and plantation over it	Continuous	31.12.2015
7	PWO1	5/- Lakhs	15 Days	Towards Operation & Maintenance of the Effluent Treatment Plant to achieve disposal standards.	Monthly	31.12.2015

[Handwritten signature]

Schedule-IV

General Conditions:

- 1) The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
- 2) Industry should monitor effluent quality, stack emissions and ambient air quality monthly/quarterly.
- 3) The applicant shall provide ports in the chimney(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
- 4) Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
- 5) The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
- 6) The firm shall submit to this office, the 30th day of September every year, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
- 7) The industry shall send used oil to reprocess/re refiners authorized by MPCB & the Hazardous Waste to CHWTSDF Butibori Nagpur as per the provision contain in the HW(MH&TM) Rules 2008.
- 8) The industry should comply with the Hazardous Waste (M,H & TM) Rules, 2008 and submit the Annual Returns as per Rule 5(6) & 22(2) of Hazarsous Waste (M,H & TM) Rules, 2008 for the preceding year April to March in Form-IV by 30th June of every year.
- 9) An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
- 10) The applicant shall obtain Consent to Operate from Maharashtra Pollution Control Board before actual commencement of the Unit/ Activity for proposed other units (in case of Consent to establish).
- 11) The applicant shall make an application for renewal of the consent before the date of the expiry of the consent.
- 12) Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act, 1981 and Environmental Protection Act, 1986 and industry specific standard under EP Rules 1986 which are available on MPCB website(www.mpcb.gov.in).
- 13) The industry shall constitute an Environmental cell with qualified staff/personnel/agency to see the day to day compliance of consent condition towards Environment Protection.
- 14) Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
- 15) Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
- 16) The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control

system. A register showing consumption of chemicals used for treatment shall be maintained.

17) Conditions for D.G. Set

- a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.
- b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
- c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper siting and control measures.
- d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.
- e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use
- f) D.G. Set shall be operated only in case of power failure.
- g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.
- h) The applicant shall comply with the notification of MoEF dated 17.05.2002 regarding noise limit for generator sets run with diesel
- 18) The industry should not cause any nuisance in surrounding area.
- 19) The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.
- 20) The applicant shall maintain good housekeeping.
- 21) The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a statement on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end, with the Environment Statement.
- 22) The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
- 23) The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.
- 24) The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.
- 25) The industry shall submit quarterly statement in respect of industries' obligation towards consent and pollution control compliance's duly supported with documentary evidences (format can be downloaded from MPCB official site).
- 26) The industry shall submit official e-mail address and any change will be duly informed to the MPCB.
- 27) The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification dt. 16.11.2009 as amended.
- 28) The industry shall comply with the notification issued by MoEF for utilization of fly ash from coal or lignite based thermal power plants dated 14th September, 1999 and as amended on 3rd November, 2009.

- 29) Industry shall provide dry fly ash handling & collection system and utilize the fly ash as per the fly ash notification of the Govt. of India
- 30) The use of beneficiated coal as per GOI Notification shall be implemented. Transportation of coal shall be carried out through trucks by covering tarpolin properly till the Rly facility from Walgaon to factory site is provided. Fly ash shall be by transported through bunker having closed system, coal carrying conveyor belt shall be covered from all side with provision of water springing/spraying system properly.
- 31) The applicant shall Operate online opacity meter/continuous monitoring system for process stack emission analysis & same shall be directly connected to MPCB website <http://mpcb.gov.in> as well as to the respective Regional Office within 3 months period and operate the same regularly.
- 32) The applicant shall Operate four continuous automatic ambient air and micrometeorological monitoring station at location indicated by MPC Board to be set up and operate at its own cost for measurement of SO₂, NO_x and particulate matter. These CAAQMS shall also have necessary provision of networking to the Air Quality Monitoring network of MPCB.
- 33) They shall promote adoption of clean coal and clean power generation technologies.
- 34) The coal handling system shall be covered with proper hooding and ventilation arrangements connected to dust suppress agent so as not to allow any fugitive emissions.
- 35) If due to any technological improvements or otherwise this Board is of opinion that all or any of the conditions referred above require variation (including the change of any control equipment either in whole or in part), this Board shall after giving the applicant an opportunity of being heard very all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions so varied.

-----0000-----



MAHARASHTRA POLLUTION CONTROL BOARD

☎ : 24020781/24010437

☎ : 24024068

Website :

<http://mpcb.mah.nic.in>

e-mail: mpcb@vsnl.net



KALPATARU POINT, 3rd & 4th floor,
Opp. Cineplanet, Near Sion Circle,
Sion (East), MUMBAI : 400 022

Red / LSI

Consent No. BO/RO(P&P)/CC- 150

Date: 17/1/2006

Consent to Establish under Section 25 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization / Renewal of Authorization under Rule 5 of the Hazardous Waste (Management & Handling) Rules 1989 and Amendment Rules, 2003.

[To be referred as Water Act, Air Act and HW(M&H) Rules respectively].

CONSENT is hereby granted to

**M/s. Maharashtra State Power Generation Co. Ltd.,
(Power Plant expansion),
Khaperkheda Thermal Power Station,
Khaperkheda, Dist- Nagpur.**

located in the area declared under the provisions of the Water Act, Air act and Authorisation under the provisions of HW(M&H) Rules and amendments thereto subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:

1. The Consent to Establish is granted for a period upto -
Commissioning of the unit.

2. The Consent is valid for the manufacture of :-

Sr.No.	Product	Maximum Quantity
1	Electric Power generation through expansion at KPKD TPS - Additional 1 x 500 MW + 20% capacity	

3. CONDITIONS UNDER WATER ACT :

- (i) The daily quantity of trade effluent from the factory shall not exceed 13680 M3 out of which 12960 M3 is to be recycled from ETP.
- (ii) The daily quantity of sewage effluent from the factory shall not exceed 3360 M3 .
- (iii) Trade Effluent :

Treatment : The applicant shall provide comprehensive treatment system consisting of primary / secondary and/or tertiary treatment as is warranted with reference to influent quality and operate and maintain the same continuously so as to achieve the quality of the treated effluent to the following standards



:2:

- A. Standards for Effluent from Captive Power Plant :
I. Cooling Tower Blow down effluent.

- B. Industrial Effluent of Power Plant:
The industrial effluent arising from various sections of Power Plant shall be given such treatment either collective or individually as the site condition permits that the final quality of effluent shall have following character standards :

I. Condensor Cooling Water :

- | | | | |
|----|-------------------------|---------------|--|
| 1) | pH | Between | 6.5 to 8.5 |
| 2) | Temperature | Not to exceed | 5 Degree C.
Higher than the intake water temperature. |
| 3) | Free available Chlorine | Not to exceed | 0.5 mg/l |

II. Boiler Blowdowns :

- | | | | | |
|----|------------------|---------------|-----|-------|
| 1) | Suspended Solids | Not to exceed | 100 | mg/l. |
| 2) | Oil & Grease | Not to exceed | 20 | mg/l. |
| 3) | Copper (Total) | Not to exceed | 1 | mg/l. |
| 4) | Iron (Total) | Not to exceed | 1 | mg/l. |

III. Cooling Tower Blowdown :

- | | | | | |
|----|-------------------------|---------------|-----|-------|
| 1) | Free available Chlorine | Not to exceed | 0.5 | mg/l. |
| 2) | Zinc | Not to exceed | 1 | mg/l. |
| 3) | Chromium (Total) | Not to exceed | 0.2 | mg/l. |
| 4) | Phosphate | Not to exceed | 5 | mg/l. |

IV. Ash Pond Effluent :

- | | | | | |
|----|------------------|---------------|------------|-------|
| 1) | pH | Between | 6.5 to 8.5 | |
| 2) | Suspended Solids | Not to exceed | 100 | mg/l. |
| 3) | Oil & Grease | Not to exceed | 20 | mg/l. |

- (iv) **Trade Effluent Disposal :** The treated effluent shall be reused in process to max. extend.

- (v) **Sewage Effluent Treatment :** The applicant shall provide comprehensive treatment system as is warranted with reference to influent quality and operate and maintain the same continuously so as to achieve the quality of treated effluent to the following standards.

- | | | | | |
|-----|-------------------|---------------|-----|-------|
| (1) | Suspended Solids | Not to exceed | 100 | mg/l. |
| (2) | BOD 3 days 27 CC. | Not to exceed | 100 | mg/l. |

- (vi) **Sewage Effluent Disposal :** The treated domestic effluent shall be allowed to soak into soak pit, which shall be cleaned periodically.



(vii) **Non-Hazardous Solid Wastes :**

Type of waste	Quantity	Treatment	Disposal
1] Bottom ash	1292 MM ³		Ash burnt / to brick mfg. units

- 1] The factory authority shall comply with the provisions of the utilisation of ash generated from their activity as stipulated in the Notification issued by Ministry of Environment & Forests, Government of India vide Notification No. SO 763(E), dated 14-09-1999.

(viii) **Other conditions :**

- 1) The industry should monitor effluent quality regularly.
- 2) Green Belt afforestation shall be done upto 33% on available open space land.

4. The applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 (to be referred as Cess Act) and Amendment Rules, 2003 thereunder:

The daily water consumption for the following categories is as under:

(i) Domestic	4800	CMD
(ii) Industrial Processing	12960	CMD
(iii) Industrial cooling / Boiler	47520	CMD
(iv) Agriculture/Gardening	--	CMD

The applicant shall regularly submit to the Board the returns of water consumption in the prescribed form and pay the Cess as specified under Section 3 of the said Act.

5. **CONDITIONS UNDER AIR ACT :**

- (i) The applicant shall install a comprehensive control system consisting of control equipments as is warranted with reference to generation of emission and operate and maintain the same continuously so as to achieve the level of pollutants to the following standards :

Control Equipment :

- 1] ESP of sufficient capacity provided to coal base boiler.

Standards for Emissions of Air Pollutants :

(i) SPM/TPM	Not to exceed	150	mg/Nm ³
(ii) SO ₂	Not to exceed	65750	Kg/day

- (ii) The applicant shall observe the following fuel pattern :-

Sr No.	Type of Fuel	Quantity
1)	Coal	2.5 MMT/year
2)	HSD	7000 KL/year

- (iii) The applicant shall erect the chimney(s) of the following specifications :-

Sr.No.	Chimney attached to	Height in Mtrs.
1	Boiler	275

- (iv) The applicant shall provide ports in the chimney/(s) and facilitates such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2. etc. and these shall be painted/displayed to facilitate identification.

- (v) The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB(A) during day time and 70 dB(A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.



(vi) **Other Conditions :**

- 1) Continuous monitoring system shall be installed for monitoring Sulphur Dioxide & Suspended Particulate Matter and results submitted to the Board every fortnight. The results for continuous monitoring done on daily basis shall be submitted after every 15 days to Regional Officer, Nagpur with a copy to Member Secretary, Mumbai. In the event of difficulty in providing the continuous monitoring system, monitoring shall be done daily and results be submitted as stated above.
- 2) The coal handling system shall be covered with proper hooding and ventilation arrangements connected to dust suppress agent so as not to allow any fugitive emissions.
- 3) A green belt with tree plantation shall be maintained upto a distance not less than 200 mtrs around Thermal Power Plant.
- 4) There shall not be any fugitive emissions.
- 5) The factory authorities shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants. The quarterly returns of the energy / consumption shall be submitted to Board Office under intimation to respective Regional and Sub Regional Officer on each 10th of January, April, July & October.
- 6) The firm shall provide continuous flow meter for the measurement of the flow of the effluent.
- 7) The industry shall not cause any nuisance in surrounding area.
- 8) The industry shall monitor stack emissions & ambient air quality regularly.

6. CONDITIONS UNDER HW (M&H) RULES, 1989 & AMENDMENT RULES, 2003:

(i) The applicant shall handle hazardous wastes as specified below:

Sr. No.	Item No. of Process generating HW as per Schedule-I	Waste substance contain as per classes of Schedule-II	Type of Waste	Quantity	Disposal
1	5.1		Used / Waste Oil		By sale to authorised reprocessor
2			Used / Waste lead acid batties		Returned to mufg./ dealer
3	34.4		ETP sludge (Re-generation)		At CHWTSDF

(ii) Treatment

(iii) The authorisation is hereby granted to operate a facility for collection, storage, and disposal.

(iv) The industry should comply with the Hazardous Wastes (Management & Handling) Amendment Rules, 2003.

7. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.



8. The applicant shall obtain Consent to Operate before commencement of production of the unit.
9. The applicant should not take any effective steps for implementation of the project unless to obtain Environment Clearance from Environment Department, Govt. of India as per EIA Notification, 1994 and amendments thereto.
10. The applicant shall comply with the conditions as stipulated under Annexure - I & II Enclosed.



D. B. Boralkar
(D. B. Boralkar)
Member Secretary

To,
M/s. Maharashtra State Power Generation Co. Ltd.,
(Power Plant expansion),
Khaperkheda Thermal Power Station,
Khaperkheda, Dist- Nagpur.

Copy to:

- 1) Regional Officer, MPCB, Nagpur.
- 2) Sub-Regional Officer, MPCB, Nagpur-I
- 3) Chief Accounts Officer, MPCB, Mumbai

Received Consent fee of -

Rs. 22,95,000/-

D.D.No.
115016

Date
26.7.05

Drawn on
Bank of Maharashtra.

4) Cess Branch, MPCB.

5) Master file.

ANNEXURE-I

1. The applicant shall maintain good house keeping and take adequate measures for control of pollution from all sources so as not to cause nuisance to surrounding area/inhabitants.
2. The applicant shall bring minimum 33% of the available open land under green coverage/ plantation.
3. **Solid Waste.**—The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission/s from civic authorities for disposal to dumping ground.
4. The applicant shall provide for an alternate electric power source sufficient to operate all pollution control facilities installed by the applicant to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent regarding pollution levels.
5. The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the Board.
6. The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous wastes to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
7. The applicant shall make an application for renewal of the consent at least 60 days before the date of expiry of the consent.
8. The firm shall submit to this office, the 30th day of September every year, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
9. An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
10. The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
11. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers down-stream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
12. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
13. The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.

ANNEXURE-II

TERMS AND CONDITIONS OF AUTHORISATION

1. The authorisation shall comply with the provisions of the Environment (Protection) Act, 1986 and the rules made thereunder.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous wastes without obtaining prior permission of the State Pollution Control Board.
4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. It is the duty of the authorised person to take permission of the State Pollution Control Board to close down the facility.
6. An application for the renewal of an authorisation shall be made as laid down in rule 5 (6) (ii).
7. (a) Category No. _____ by land fill.

The hazardous waste to be disposed of through landfill shall not contain following constituents in excess of limits specified below :—

Sulphate	... 1000 mg/kg.
Chloride	... 1000 mg/kg.
Mixture of heavy metals (Cu+Ni+Cr+Zn)	... 25 mg/kg.
Lead	... 1.0 mg/kg.
Hg	... 0.01 mg/kg.

The firm shall take appropriate measures to put a lining to landfill site so as to arrest the passage of leachates to ground water. Leachates generated, if any shall be connected to existing Effluent Treatment Plant facilities for treatment and disposed of as per the consent conditions stipulated under Water (Prevention and Control of Pollution) Act, 1974.

7. (b) Category No. _____ by land fill.

The wastes which are either disposed of through contractor or which are sold through the contractor shall be disposed of/sold under intimation of this office. The firm shall ensure that the Contractor/s hold/s valid consent under Water (Prevention and Control of Pollution) Act, 1974 and authorisation under Environment (Protection) Act, 1986, i.e. under Rules notified on 28th July, 1989 and 27th November, 1989.

- (c) Category No. _____ by incineration through incinerator.

The firm shall meet the emission standards as prescribed below for the incineration plant:—

Acidate	... 150 mg/Nm ³ .
HCl	... 100 mg/Nm ³ .
Hf	... 2 mg/Nm ³ .
SO ₂	... 300 mg/Nm ³ .
NO _x	... 50 ppm.
Lead	... 10 mg/Nm ³ .
Mixture of As+Cd+Cr+Hg+Ni...	... 0.2 mg/Nm ³ .
TOC	... 20 mg/Nm ³ .
CO	... 100 ppm.

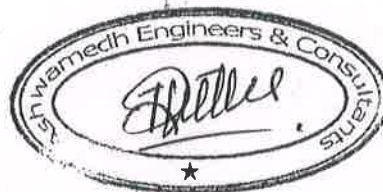
The firm shall make efforts to reduce emission by adopting—

- (i) Improved burning technology.
- (ii) Optimised technology for flue gas cleaning and shall create facilities for monitoring the gaseous emissions.

The ash generated in incinerator plant shall be disposed of through landfill at a designated site.

Stack Emission Monitoring Average Report
Khaperkheda Thermal Power Station, Khaperkheda.
(1 X 500 MW)
Month - OCTOBER 2018

WEEK	UNIT NO. 5												
	Date	Temperature (°C)	Velocity (m/sec)	Flow Rate (m³/sec)	SPM (mg/Nm³)	SO ₂ (mg/Nm³)	SO ₂ (T/day)	Nox (mg/Nm³)	Pb (mg/Nm³)	NH ₃ (mg/Nm³)	Mercury (Hg) (mg/Nm³)	CO (mg/Nm³)	Moisture (%)
1st WEEK	06.10.2018	133	21.0	807.8	42	1562	80.0	340	0.034	ND	BDL	18.2	2.80
2nd WEEK	11.10.2018	138	21.9	842.4	40	1362	71.9	296	0.028	ND	BDL	22.4	2.00
3rd WEEK	23.10.2018	136	24.2	930.9	46	1490	87.3	367	0.024	ND	BDL	15.5	2.40
4th WEEK	30.10.2018	137	21.3	819.3	41	1288	66.3	308	0.026	ND	BDL	26.4	1.80
MONTHLY AVG.		136	22.1	850.1	42	1426	76.4	328	0.028	ND	BDL	20.6	2.25





Ambient Air Quality Monitoring Average Report

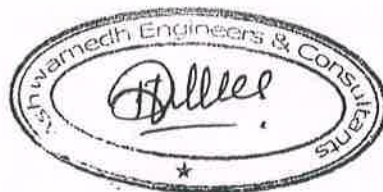
Khaperkheda Thermal Power Station, Khaperkheda.

Month - OCTOBER 2018 (1 X 500 MW)

Period of Monitoring : 01.10.2018 To 30.10.2018

Location	Near ETP											
Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO _x	O ₃	Pb	CO	NH ₃	C ₆ H ₆	BaP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
01.10.2018	64	30	10	12	28	<0.02	0.60	14	N.D.	N.D.	N.D.	<3
04.10.2018	60	24	10	12	22	<0.02	0.64	17	N.D.	N.D.	N.D.	<3
Wkly Avg.	62	27	10	12	25	<0.02	0.62	16	N.D.	N.D.	N.D.	<3
08.10.2018	65	17	8	16	26	<0.02	0.64	16	N.D.	N.D.	N.D.	<3
11.10.2018	64	27	14	14	24	<0.02	0.62	20	N.D.	N.D.	N.D.	<3
Wkly Avg.	65	22	11	15	25	<0.02	0.63	18	N.D.	N.D.	N.D.	<3
15.10.2018	56	35	10	16	26	<0.02	0.56	20	N.D.	N.D.	N.D.	<3
18.10.2018	72	31	8	15	28	<0.02	0.65	33	N.D.	N.D.	N.D.	<3
Wkly Avg.	64	33	9	16	27	<0.02	0.61	27	N.D.	N.D.	N.D.	<3
22.10.2018	75	34	10	21	33	<0.02	0.60	24	N.D.	N.D.	N.D.	<3
25.10.2018	64	29	11	21	29	<0.02	0.57	25	N.D.	N.D.	N.D.	<3
30.10.2018	63	32	9	21	27	<0.02	0.63	24	N.D.	N.D.	N.D.	<3
Wkly Avg.	67	32	10	21	30	<0.02	0.60	24	N.D.	N.D.	N.D.	<3
Monthly Avg.	65	29	10	17	27	<0.02	0.61	22	N.D.	N.D.	N.D.	<3

National Ambient Air Quality Standards					
PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	Nox (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)
100 (24 hrs.)	60 (24 hrs.)	80 (24 hrs.)	80 (24 hrs.)	180 (1 hrs.)	1.0 (24 hrs.)
CO (mg/m ³)	NH ₃ (µg/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)	O ₃ (µg/m ³)	As (ng/m ³)
04 (1 hrs.)	400 (24 hrs.)	05 (Annual)	01 (Annual)	180 (1 hrs.)	06 (Annual)





National Air Quality Monitoring System Reporting Form for Particulate Matter (Form 1-10-70)

Instructions: This form is to be filled out by the person responsible for the monitoring station.

Station Information										Reporting Period	
Station Name										From	To
Location										Month	Year
County											
State											
Latitude											
Longitude											
Altitude											
Population											
Distance to nearest city											
Distance to nearest highway											
Distance to nearest airport											
Distance to nearest industrial area											
Distance to nearest power plant											
Distance to nearest major road											
Distance to nearest water body											
Distance to nearest residential area											
Distance to nearest commercial area											
Distance to nearest school											
Distance to nearest hospital											
Distance to nearest government building											
Distance to nearest religious building											
Distance to nearest entertainment area											
Distance to nearest sports area											
Distance to nearest park											
Distance to nearest golf course											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											
Distance to nearest cemetery											



Ambient Air Quality Monitoring Average Report

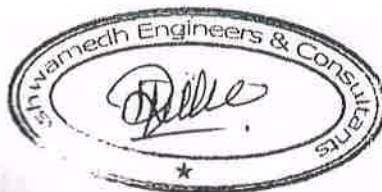
Khaperkheda Thermal Power Station, Khaperkheda.

Month - OCTOBER 2018 (1 X 500MW)

Period of Monitoring : 01.10.2018 To 30.10.2018

Location	Near STP											
Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO _x	O ₃	Pb	CO	NH ₃	C ₆ H ₆	BaP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
01.10.2018	114	30	14	18	30	<0.02	0.58	24	N.D.	N.D.	N.D.	<3
04.10.2018	82	49	9	14	31	<0.02	0.60	16	N.D.	N.D.	N.D.	<3
Wkly Avg.	98	40	12	16	31	<0.02	0.59	20	N.D.	N.D.	N.D.	<3
08.10.2018	88	49	14	24	32	<0.02	0.60	26	N.D.	N.D.	N.D.	<3
11.10.2018	80	43	16	20	28	<0.02	0.58	24	N.D.	N.D.	N.D.	<3
Wkly Avg.	84	46	15	22	30	<0.02	0.59	25	N.D.	N.D.	N.D.	<3
15.10.2018	88	23	14	18	28	<0.02	0.58	22	N.D.	N.D.	N.D.	<3
18.10.2018	92	37	16	24	34	<0.02	0.69	29	N.D.	N.D.	N.D.	<3
Wkly Avg.	90	30	15	21	31	<0.02	0.64	26	N.D.	N.D.	N.D.	<3
22.10.2018	73	30	13	26	34	<0.02	0.75	29	N.D.	N.D.	N.D.	<3
25.10.2018	82	28	12	23	29	<0.02	0.63	27	N.D.	N.D.	N.D.	<3
30.10.2018	68	31	11	21	32	<0.02	0.85	24	N.D.	N.D.	N.D.	<3
Wkly Avg.	74	30	12	23	32	<0.02	0.74	27	N.D.	N.D.	N.D.	<3
Monthly Avg.	83	35	14	22	31	<0.02	0.66	25	N.D.	N.D.	N.D.	<3

National Ambient Air Quality Standards					
PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	No _x (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)
100 (24 hrs.)	60 (24 hrs.)	80 (24 hrs.)	80 (24 hrs.)	180 (1 hrs.)	1.0 (24 hrs.)
CO (mg/m ³)	NH ₃ (µg/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)	O ₃ (µg/m ³)	As (ng/m ³)
04 (1 hrs.)	400 (24 hrs.)	05 (Annual)	01 (Annual)	180 (1 hrs.)	06 (Annual)



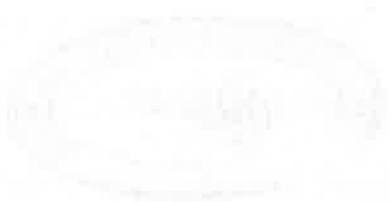


SUMMARY OF DATA FOR THE STUDY OF THE EFFECTS OF SPACE FLIGHT ON THE HUMAN BODY

Prepared by the
 National Aeronautics and Space Administration

TABLE 1											
Summary of Data for the Study of the Effects of Space Flight on the Human Body											
Subject	Age	Sex	Height	Weight	Weight	Weight	Weight	Weight	Weight	Weight	Weight
1	28	M	5'10"	170	170	170	170	170	170	170	170
2	32	F	5'8"	150	150	150	150	150	150	150	150
3	35	M	6'0"	180	180	180	180	180	180	180	180
4	38	F	5'6"	140	140	140	140	140	140	140	140
5	40	M	6'2"	190	190	190	190	190	190	190	190
6	42	F	5'4"	130	130	130	130	130	130	130	130
7	45	M	6'4"	200	200	200	200	200	200	200	200
8	48	F	5'2"	120	120	120	120	120	120	120	120
9	50	M	6'6"	210	210	210	210	210	210	210	210
10	52	F	5'0"	110	110	110	110	110	110	110	110
11	55	M	6'8"	220	220	220	220	220	220	220	220
12	58	F	4'10"	100	100	100	100	100	100	100	100
13	60	M	7'0"	230	230	230	230	230	230	230	230
14	62	F	4'8"	90	90	90	90	90	90	90	90
15	65	M	7'2"	240	240	240	240	240	240	240	240
16	68	F	4'6"	80	80	80	80	80	80	80	80
17	70	M	7'4"	250	250	250	250	250	250	250	250
18	72	F	4'4"	70	70	70	70	70	70	70	70
19	75	M	7'6"	260	260	260	260	260	260	260	260
20	78	F	4'2"	60	60	60	60	60	60	60	60
21	80	M	7'8"	270	270	270	270	270	270	270	270
22	82	F	4'0"	50	50	50	50	50	50	50	50
23	85	M	8'0"	280	280	280	280	280	280	280	280
24	88	F	3'10"	40	40	40	40	40	40	40	40
25	90	M	8'2"	290	290	290	290	290	290	290	290
26	92	F	3'8"	30	30	30	30	30	30	30	30
27	95	M	8'4"	300	300	300	300	300	300	300	300
28	98	F	3'6"	20	20	20	20	20	20	20	20
29	100	M	8'6"	310	310	310	310	310	310	310	310
30	102	F	3'4"	10	10	10	10	10	10	10	10

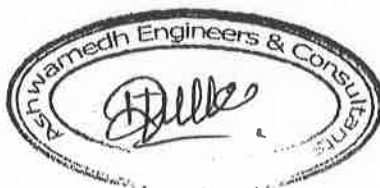
TABLE 2					
Summary of Data for the Study of the Effects of Space Flight on the Human Body					
Subject	Age	Sex	Height	Weight	Weight
1	28	M	5'10"	170	170
2	32	F	5'8"	150	150
3	35	M	6'0"	180	180
4	38	F	5'6"	140	140
5	40	M	6'2"	190	190
6	42	F	5'4"	130	130
7	45	M	6'4"	200	200
8	48	F	5'2"	120	120
9	50	M	6'6"	210	210
10	52	F	5'0"	110	110
11	55	M	6'8"	220	220
12	58	F	4'10"	100	100
13	60	M	7'0"	230	230
14	62	F	4'8"	90	90
15	65	M	7'2"	240	240
16	68	F	4'6"	80	80
17	70	M	7'4"	250	250
18	72	F	4'4"	70	70
19	75	M	7'6"	260	260
20	78	F	4'2"	60	60
21	80	M	7'8"	270	270
22	82	F	4'0"	50	50
23	85	M	8'0"	280	280
24	88	F	3'10"	40	40
25	90	M	8'2"	290	290
26	92	F	3'8"	30	30
27	95	M	8'4"	300	300
28	98	F	3'6"	20	20
29	100	M	8'6"	310	310
30	102	F	3'4"	10	10





Stack Emission Monitoring Average Report
Khaperkheda Thermal Power Station, Khaperkheda.
(1 X 500 MW)
Month - NOVEMBER 2018

WEEK	UNIT NO. 5												
	Date	Temperature (°C)	Velocity (m/sec)	Flow Rate (m ³ /sec)	SPM (mg/Nm ³)	SO ₂ (mg/Nm ³)	SO ₂ (T/day)	Nox (mg/Nm ³)	Pb (mg/Nm ³)	NH ₃ (mg/Nm ³)	Mercury (Hg) (mg/Nm ³)	CO (mg/Nm ³)	Moisture (%)
1st WEEK	08.11.2018	134	22.4	861.6	42	1398	76.2	318	0.030	ND	BDL	22.4	2.82
2nd WEEK	17.11.2018	133	21.9	842.4	44	1632	87.2	276	0.026	ND	BDL	16.7	1.98
3rd WEEK	23.11.2018	132	21.2	815.5	48	1756	91.0	367	0.020	ND	BDL	24.6	2.30
4th WEEK	29.11.2018	134	20.2	777.0	46	1688	83.0	226	0.032	ND	BDL	20.6	1.67
MONTHLY AVG.		133	21.4	824.1	45	1619	84.4	297	0.027	ND	BDL	21.1	2.19





Ambient Air Quality Monitoring Average Report

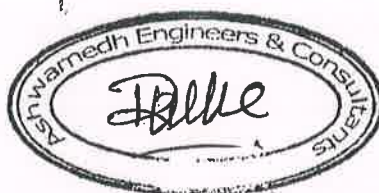
Khaperkheda Thermal Power Station, Khaperkheda.

Month - NOVEMBER 2018 (1 X 500 MW)

Period of Monitoring : 01.11.2018 To 27.11.2018

Location	Near ETP											
Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO _x	O ₃	Pb	CO	NH ₃	C ₆ H ₆	BaP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
02.11.2018	80	19	12	14	26	<0.02	0.74	11	N.D.	N.D.	N.D.	<3
06.11.2018	72	33	8	10	29	<0.02	0.83	17	N.D.	N.D.	N.D.	<3
Wkly Avg.	76	26	10	12	28	<0.02	0.79	14	N.D.	N.D.	N.D.	<3
09.11.2018	67	26	9	10	25	<0.02	0.86	12	N.D.	N.D.	N.D.	<3
13.11.2018	87	23	11	14	26	<0.02	0.68	14	N.D.	N.D.	N.D.	<3
Wkly Avg.	77	25	10	12	26	<0.02	0.77	13	N.D.	N.D.	N.D.	<3
16.11.2018	55	32	8	12	27	<0.02	0.83	12	N.D.	N.D.	N.D.	<3
20.11.2018	66	25	10	14	26	<0.02	0.67	14	N.D.	N.D.	N.D.	<3
Wkly Avg.	61	29	9	13	27	<0.02	0.75	13	N.D.	N.D.	N.D.	<3
24.11.2018	85	36	11	17	20	<0.02	0.95	15	N.D.	N.D.	N.D.	<3
27.11.2018	74	32	9	15	26	<0.02	0.83	13	N.D.	N.D.	N.D.	<3
Wkly Avg.	80	34	10	16	23	<0.02	0.89	14	N.D.	N.D.	N.D.	<3
Monthly Avg.	73	29	10	14	25	<0.02	0.80	13	N.D.	N.D.	N.D.	<3

National Ambient Air Quality Standards					
PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	Nox (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)
100 (24 hrs.)	60 (24 hrs.)	80 (24 hrs.)	80 (24 hrs.)	180 (1 hrs.)	1.0 (24 hrs.)
CO (mg/m ³)	NH ₃ (µg/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)	O ₃ (µg/m ³)	As (ng/m ³)
04 (1 hrs.)	400 (24 hrs.)	05 (Annual)	01 (Annual)	180 (1 hrs.)	06 (Annual)





Ambient Air Quality Monitoring Average Report

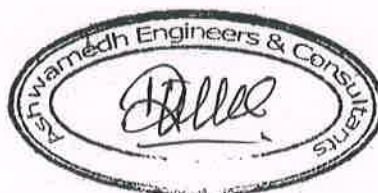
Khaperkheda Thermal Power Station, Khaperkheda.

Month - NOVEMBER 2018 (1 X 500MW)

Period of Monitoring : 02.11.2018 To 27.11.2018

Location	Near STP											
Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO _x	O ₃	Pb	CO	NH ₃	C ₆ H ₆	BaP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
02.11.2018	77	35	8	9	24	<0.02	0.75	12	N.D.	N.D.	N.D.	<3
06.11.2018	86	39	15	20	25	<0.02	0.95	14	N.D.	N.D.	N.D.	<3
Wkly Avg.	82	37	12	15	25	<0.02	0.85	13	N.D.	N.D.	N.D.	<3
09.11.2018	80	28	12	11	28	<0.02	0.75	15	N.D.	N.D.	N.D.	<3
13.11.2018	85	36	12	14	27	<0.02	0.72	15	N.D.	N.D.	N.D.	<3
Wkly Avg.	83	32	12	13	28	<0.02	0.74	15	N.D.	N.D.	N.D.	<3
16.11.2018	80	46	12	17	31	<0.02	0.93	18	N.D.	N.D.	N.D.	<3
20.11.2018	80	41	15	22	25	<0.02	0.72	15	N.D.	N.D.	N.D.	<3
Wkly Avg.	80	44	14	20	28	<0.02	0.83	17	N.D.	N.D.	N.D.	<3
24.11.2018	93	46	11	19	25	<0.02	0.97	17	N.D.	N.D.	N.D.	<3
27.11.2018	98	44	16	23	21	<0.02	0.79	13	N.D.	N.D.	N.D.	<3
Wkly Avg.	96	45	14	21	23	<0.02	0.88	15	N.D.	N.D.	N.D.	<3
Monthly Avg.	86	40	13	17	26	<0.02	0.82	15	N.D.	N.D.	N.D.	<3

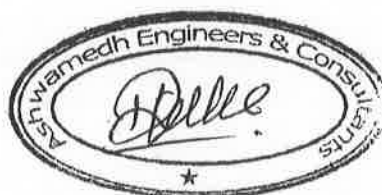
National Ambient Air Quality Standards					
PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	Nox (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)
100 (24 hrs.)	60 (24 hrs.)	80 (24 hrs.)	80 (24 hrs.)	180 (1 hrs.)	1.0 (24 hrs.)
CO (mg/m ³)	NH ₃ (µg/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)	O ₃ (µg/m ³)	As (ng/m ³)
04 (1 hrs.)	400 (24 hrs.)	05 (Annual)	01 (Annual)	180 (1 hrs.)	06 (Annual)





Stack Emission Monitoring Average Report
 Khaperkheda Thermal Power Station, Khaperkheda.
 (1 X 500 MW)
 Month - DECEMBER 2018

WEEK	UNIT NO. 5												
	Date	Temperature (°C)	Velocity (m/sec)	Flow Rate (m ³ /sec)	SPM (mg/Nm ³)	SO ₂ (mg/Nm ³)	SO ₂ (t/day)	Nox (mg/Nm ³)	Pb (mg/Nm ³)	NH ₃ (mg/Nm ³)	Mercury (Hg) (mg/Nm ³)	CO (mg/Nm ³)	Moisture (%)
1st WEEK	08.12.2018	136	22.1	850.1	51	1821	97.4	320	0.028	ND	BDL	20.4	1.10
2nd WEEK	13.12.2018	131	22.8	877.0	50	1556	87.0	358	0.033	ND	BDL	16.6	1.70
3rd WEEK	22.12.2018	128	20.8	800.1	40	1802	92.6	318	0.025	ND	BDL	24.2	1.06
4th WEEK	31.12.2018	130	21.6	830.8	48	1359	72.1	326	0.030	ND	BDL	12.8	0.98
MONTHLY AVG.		131	21.8	839.5	47	1635	87.3	331	0.029	ND	BDL	18.5	1.21





Ambient Air Quality Monitoring Average Report

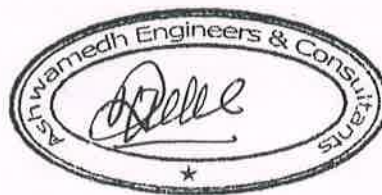
Khaperkheda Thermal Power Station, Khaperkheda.

Month -DECEMBER 2018 (1 X 500 MW)

Period of Monitoring : 01.12.2018 To 28.12.2018

Location	Near ETP											
Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO _x	O ₃	Pb	CO	NH ₃	C ₆ H ₆	BaP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
01.12.2018.	65	33	9	16	23	<0.02	0.79	17	N.D.	N.D.	N.D.	<3
04.12.2018	63	37	12	19	27	<0.02	0.67	14	N.D.	N.D.	N.D.	<3
Wkly Avg.	64	35	11	18	25	<0.02	0.73	16	N.D.	N.D.	N.D.	<3
07.12.2018	58	31	9	13	26	<0.02	0.74	19	N.D.	N.D.	N.D.	<3
11.12.2018	62	36	11	18	31	<0.02	0.87	20	N.D.	N.D.	N.D.	<3
Wkly Avg.	60	34	10	16	29	<0.02	0.81	20	N.D.	N.D.	N.D.	<3
14.12.2018	58	32	8	14	34	<0.02	0.76	24	N.D.	N.D.	N.D.	<3
18.12.2018	67	39	11	20	29	<0.02	0.69	26	N.D.	N.D.	N.D.	<3
Wkly Avg.	63	36	10	17	32	<0.02	0.73	25	N.D.	N.D.	N.D.	<3
18.12.2018	79	39	10	16	34	<0.02	0.68	22	N.D.	N.D.	N.D.	<3
24.12.2018	68	33	8	14	31	<0.02	0.62	26	N.D.	N.D.	N.D.	<3
28.12.2018	63	28	10	19	26	<0.02	0.70	28	N.D.	N.D.	N.D.	<3
Wkly Avg.	70	33	9	16	30	<0.02	0.67	25	N.D.	N.D.	N.D.	<3
Monthly Avg.	65	34	10	16	30	<0.02	0.73	23	N.D.	N.D.	N.D.	<3

National Ambient Air Quality Standards					
PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	Nox (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)
100 (24 hrs.)	60 (24 hrs.)	80 (24 hrs.)	80 (24 hrs.)	180 (1 hrs.)	1.0 (24 hrs.)
CO (mg/m ³)	NH ₃ (µg/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)	O ₃ (µg/m ³)	As (ng/m ³)
04 (1 hrs.)	400 (24 hrs.)	05 (Annual)	01 (Annual)	180 (1 hrs.)	06 (Annual)





Ambient Air Quality Monitoring Average Report

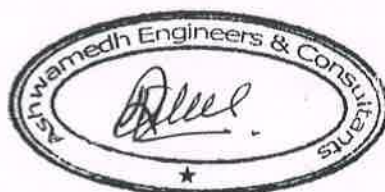
Khaperkheda Thermal Power Station, Khaperkheda.

Month - DECEMBER 2018 (1 X 500MW)

Period of Monitoring : 01.12.2018 To 28.12.2018

Location	Near STP											
Parameter	PM ₁₀	PM _{2.5}	SO ₂	NO _x	O ₃	Pb	CO	NH ₃	C ₆ H ₆	BaP	As	Ni
Unit	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	ng/m ³
01.12.2018.	92	39	13	25	29	<0.02	0.93	20	N.D.	N.D.	N.D.	<3
04.12.2018	88	44	16	28	35	<0.02	0.75	17	N.D.	N.D.	N.D.	<3
Wkly Avg.	90	42	15	27	32	<0.02	0.84	19	N.D.	N.D.	N.D.	<3
07.12.2018	86	56	12	20	30	<0.02	0.97	15	N.D.	N.D.	N.D.	<3
11.12.2018	93	51	14	24	33	<0.02	0.78	18	N.D.	N.D.	N.D.	<3
Wkly Avg.	90	54	13	22	32	<0.02	0.88	17	N.D.	N.D.	N.D.	<3
14.12.2018	68	33	10	19	30	<0.02	0.75	15	N.D.	N.D.	N.D.	<3
18.12.2018	91	38	13	22	27	<0.02	0.81	18	N.D.	N.D.	N.D.	<3
Wkly Avg.	80	36	12	21	29	<0.02	0.78	17	N.D.	N.D.	N.D.	<3
18.12.2018	89	44	14	27	33	<0.02	0.70	21	N.D.	N.D.	N.D.	<3
24.12.2018	72	35	9	22	29	<0.02	0.83	26	N.D.	N.D.	N.D.	<3
28.12.2018	77	46	12	25	33	<0.02	0.82	23	N.D.	N.D.	N.D.	<3
Wkly Avg.	79	42	12	25	32	<0.02	0.78	23	N.D.	N.D.	N.D.	<3
Monthly Avg.	83	43	12	23	31	<0.02	0.81	19	N.D.	N.D.	N.D.	<3

National Ambient Air Quality Standards					
PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ (µg/m ³)	Nox (µg/m ³)	O ₃ (µg/m ³)	Pb (µg/m ³)
100 (24 hrs.)	60 (24 hrs.)	80 (24 hrs.)	80 (24 hrs.)	180 (1 hrs.)	1.0 (24 hrs.)
CO (mg/m ³)	NH ₃ (µg/m ³)	C ₆ H ₆ (µg/m ³)	BaP (ng/m ³)	O ₃ (µg/m ³)	As (ng/m ³)
04 (1 hrs.)	400 (24 hrs.)	05 (Annual)	01 (Annual)	180 (1 hrs.)	06 (Annual)



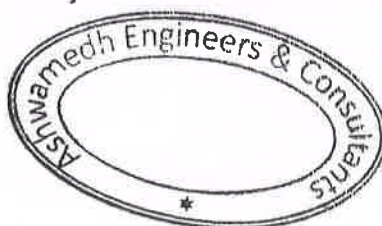
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/10/18/5593 (2) AA/10/18/5594	Report Date	23/10/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	1. Near Canteen front side (S) 2. Near Canteen Back side (B)	Date-Sampling	16/10/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	17/10/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	17/10/2018
Order Reference	KPKD/4500077668/PO NO.0250 Dt. 01.02.2017	Date-Completion of Analysis	22/10/2018

Meteorological Data / Environmental Conditions

*Average Wind Velocity - km/h	*Wind Direction -	*Relative Humidity (Max./Min.): - %	*Temperature (Max./Min.): - °C	*Duration of Survey 8 h
Parameter	Results		Unit	Method
	(1)	(2)		
Respirable Suspended Particulate Matter (RSPM)	132	106	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	359	300	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	12	10	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2.
Nitrogen Dioxide (NO ₂)	20	18	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Ninad Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



-----End of Report-----

Note:

1. The result listed refer only to the tested sample(s) and applicable parameter(s).
2. This report is not to be reproduced except in full, without written approval of the laboratory.
3. Perishable samples will be disposed immediately after report dispatch.
4. Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.
5. The parameters marked with an * are not accredited by NABL.

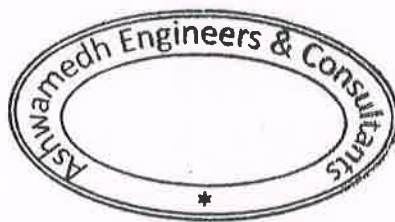
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/10/18/5595 (2) AA/10/18/5596	Report Date	23/10/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	3. Near Crusher House (Source) 4. Near Service building (Background)	Date-Sampling	16/10/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	17/10/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	17/10/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	22/10/2018

Meteorological Data / Environmental Conditions

*Average Wind Velocity km/h	*Wind Direction -	*Relative Humidity (Max./Min.): - %	*Temperature (Max./Min.): - °C	*Duration of Survey -
Parameter	Results		Unit	Method
	(3)	(4)		
Respirable Suspended Particulate Matter (RSPM)	374	196	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	826	477	µg/m ³	IS 5182 (Part 4): 1989, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	14	9	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2,
Nitrogen Dioxide (NO ₂)	20	16	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Nalin Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



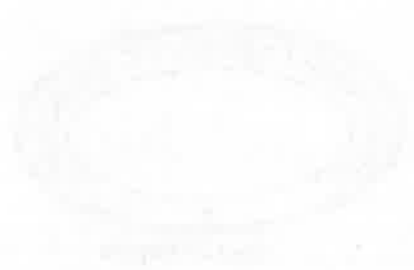
-----End of Report-----

- Note:**
1. The result listed refer only to the tested sample(s) and applicable parameter(s).
 2. This report is not to be reproduced except in full, without written approval of the laboratory.
 3. Perishable samples will be disposed immediately after report dispatch.
 4. Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.
 5. The parameters marked with an * are not accredited by NABL.



Page 1 of 1
Date: 10/10/2010
Time: 10:10:10
User: admin

Table 1: Summary of Data			
Category	Sub-category	Value 1	Value 2
A	A.1	10	20
	A.2	30	40
B	B.1	50	60
	B.2	70	80
C	C.1	90	100
	C.2	110	120
D	D.1	130	140
	D.2	150	160
E	E.1	170	180
	E.2	190	200
F	F.1	210	220
	F.2	230	240
G	G.1	250	260
	G.2	270	280
H	H.1	290	300
	H.2	310	320
I	I.1	330	340
	I.2	350	360
J	J.1	370	380
	J.2	390	400
K	K.1	410	420
	K.2	430	440
L	L.1	450	460
	L.2	470	480
M	M.1	490	500
	M.2	510	520
N	N.1	530	540
	N.2	550	560
O	O.1	570	580
	O.2	590	600
P	P.1	610	620
	P.2	630	640
Q	Q.1	650	660
	Q.2	670	680
R	R.1	690	700
	R.2	710	720
S	S.1	730	740
	S.2	750	760
T	T.1	770	780
	T.2	790	800
U	U.1	810	820
	U.2	830	840
V	V.1	850	860
	V.2	870	880
W	W.1	890	900
	W.2	910	920
X	X.1	930	940
	X.2	950	960
Y	Y.1	970	980
	Y.2	990	1000
Z	Z.1	1010	1020
	Z.2	1030	1040



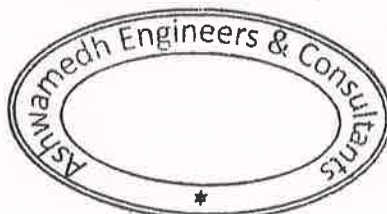
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/10/18/5597 (2) AA/10/18/5598	Report Date	24/10/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	5. Near Wagon Tippler (Source) 6. Near D.M.Plant (Background)	Date-Sampling	17/10/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	18/10/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	18/10/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	23/10/2018

Meteorological Data / Environmental Conditions

*Average Wind Velocity - km/h	*Wind Direction -	*Relative Humidity (Max./Min.): - %	*Temperature (Max./Min.): - °C	*Duration of Survey -
Parameter	Results		Unit	Method
	(5)	(6)		
Respirable Suspended Particulate Matter (RSPM)	267	134	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	663	356	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	12	8	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2,
Nitrogen Dioxide (NO ₂)	18	15	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Ninad Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



-----End of Report-----

Note:

1. The result listed refer only to the tested sample(s) and applicable parameter(s).
2. This report is not to be reproduced except in full, without written approval of the laboratory.
3. Perishable samples will be disposed immediately after report dispatch.
4. Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.
5. The parameters marked with an * are not accredited by NABL.

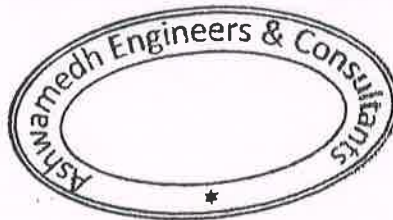
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/10/18/5599 (2) AA/10/18/5600	Report Date	24/10/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	7. Near AHP (Source) 8. Near ID Fan Outlet (Background)	Date-Sampling	17/10/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	18/10/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	18/10/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	23/10/2018

Meteorological Data / Environmental Conditions

*Average Wind Velocity - km/h	*Wind Direction -	*Relative Humidity (Max./Min.): - %	*Temperature (Max./Min.): - °C	*Duration of Survey -
Parameter	Results		Unit	Method
	(7)	(8)		
Respirable Suspended Particulate Matter (RSPM)	363	239	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	909	623	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	14	12	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2.
Nitrogen Dioxide (NO ₂)	22	19	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Minad Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



-----End of Report-----

Note:

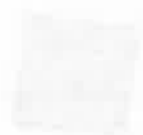
1. The result listed refer only to the tested sample(s) and applicable parameter(s).
2. This report is not to be reproduced except in full, without written approval of the laboratory.
3. Perishable samples will be disposed immediately after report dispatch.
4. Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.
5. The parameters marked with an * are not accredited by NABL.

1. Name of the person
 2. Address of the person
 3. City of the person

4. Date of the person
 5. Time of the person
 6. Place of the person

THE NEW YORK PUBLIC LIBRARY

Name of the person		Address of the person		City of the person	
1. Name of the person		2. Address of the person		3. City of the person	
4. Date of the person		5. Time of the person		6. Place of the person	
7. Name of the person		8. Address of the person		9. City of the person	
10. Date of the person		11. Time of the person		12. Place of the person	
13. Name of the person		14. Address of the person		15. City of the person	
16. Date of the person		17. Time of the person		18. Place of the person	
19. Name of the person		20. Address of the person		21. City of the person	
22. Date of the person		23. Time of the person		24. Place of the person	
25. Name of the person		26. Address of the person		27. City of the person	
28. Date of the person		29. Time of the person		30. Place of the person	
31. Name of the person		32. Address of the person		33. City of the person	
34. Date of the person		35. Time of the person		36. Place of the person	
37. Name of the person		38. Address of the person		39. City of the person	
40. Date of the person		41. Time of the person		42. Place of the person	
43. Name of the person		44. Address of the person		45. City of the person	
46. Date of the person		47. Time of the person		48. Place of the person	
49. Name of the person		50. Address of the person		51. City of the person	
52. Date of the person		53. Time of the person		54. Place of the person	
55. Name of the person		56. Address of the person		57. City of the person	
58. Date of the person		59. Time of the person		60. Place of the person	
61. Name of the person		62. Address of the person		63. City of the person	
64. Date of the person		65. Time of the person		66. Place of the person	
67. Name of the person		68. Address of the person		69. City of the person	
70. Date of the person		71. Time of the person		72. Place of the person	
73. Name of the person		74. Address of the person		75. City of the person	
76. Date of the person		77. Time of the person		78. Place of the person	
79. Name of the person		80. Address of the person		81. City of the person	
82. Date of the person		83. Time of the person		84. Place of the person	
85. Name of the person		86. Address of the person		87. City of the person	
88. Date of the person		89. Time of the person		90. Place of the person	
91. Name of the person		92. Address of the person		93. City of the person	
94. Date of the person		95. Time of the person		96. Place of the person	
97. Name of the person		98. Address of the person		99. City of the person	
100. Date of the person		101. Time of the person		102. Place of the person	



1. Name of the person
 2. Address of the person
 3. City of the person
 4. Date of the person
 5. Time of the person
 6. Place of the person

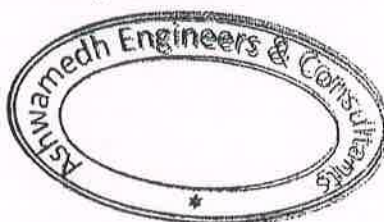
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/10/18/5700 (2) AA/10/18/5701	Report Date	25/10/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	09. Near Coal Stock Yard (S) 10. Near CHP Security Office (B)	Date-Sampling	19/10/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	20/10/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	20/10/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	24/10/2018

Meteorological Data / Environmental Conditions

*Average Wind Velocity - km/h	*Wind Direction -	*Relative Humidity (Max./Min.): - %	*Temperature (Max./Min.): - °C	*Duration of Survey -
Parameter	Results		Unit	Method
	(9)	(10)		
Respirable Suspended Particulate Matter (RSPM)	353	212	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	851	553	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO₂)	13	11	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2,
Nitrogen Dioxide (NO₂)	20	17	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Minad Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



-----End of Report-----

Note:

1. The result listed refer only to the tested sample(s) and applicable parameter(s).
2. This report is not to be reproduced except in full, without written approval of the laboratory.
3. Perishable samples will be disposed immediately after report dispatch.
4. Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.
5. The parameters marked with an * are not accredited by NABL.




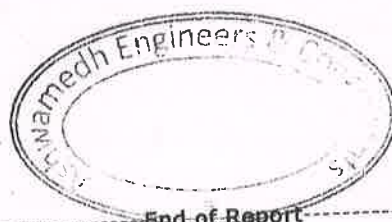
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/12/18/5632 (2) AA/12/18/5633	Report Date	21/12/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	1. Near Canteen front side (S) 2. Near Canteen Back side (B)	Date-Sampling	15/12/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	17/12/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	17/12/2018
Order Reference	KPKD/4500077668/PO NO.0250 Dt. 01.02.2017	Date-Completion of Analysis	20/12/2018

Meteorological Data / Environmental Conditions

Average Wind Velocity - km/h	Wind Direction -	Relative Humidity (Max./Min.): - %	Temperature (Max./Min.): - °C	Duration of Survey 8 h
Parameter	Results		Unit	Method
	(1)	(2)		
Respirable Suspended Particulate Matter (RSPM)	396	137	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	595	385	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	13	11	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2.
Nitrogen Dioxide (NO ₂)	20	16	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 H. Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



End of Report

FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/12/18/5659 (2)AA/12/18/5660	Report Date	22/12/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	3. Near Crusher House (Source) 4. Near Service building(Background)	Date-Sampling	17/12/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	19/12/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	19/12/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	22/12/2018

Meteorological Data / Environmental Conditions				
Average Wind Velocity - km/h	Wind Direction -	Relative Humidity (Max./Min.): - %	Temperature (Max./Min.): - °C	Duration of Survey -
Parameter	Results		Unit	Method
	(3)	(4)		
Respirable Suspended Particulate Matter (RSPM)	574	187	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	1340	517	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	13	10	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2.
Nitrogen Dioxide (NO ₂)	22	16	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


Nirad Soundankar
Technical Manager (Chemical)
AUTHORISED SIGNATORY



End of Report

STATEMENT OF WORKING MEMBERS

NAME OF THE MEMBER		DESIGNATION		ADDRESS	
1. Mr. A. B. C.		Member		123, Main Road, New Delhi	
2. Mr. D. E. F.		Member		456, Park Street, Calcutta	
3. Mr. G. H. I.		Member		789, Market Street, Bombay	
4. Mr. J. K. L.		Member		101, High Street, Madras	
5. Mr. M. N. O.		Member		202, Station Road, Lucknow	
6. Mr. P. Q. R.		Member		303, Canal Road, Patna	
7. Mr. S. T. U.		Member		404, Bazaar, Ranchi	
8. Mr. V. W. X.		Member		505, Hill Road, Shimla	
9. Mr. Y. Z. A.		Member		606, Fort Road, Coimbatore	
10. Mr. B. C. D.		Member		707, Temple Road, Pondicherry	
11. Mr. E. F. G.		Member		808, Airport Road, Thiruvananthapuram	
12. Mr. H. I. J.		Member		909, Railway Road, Bhubaneswar	
13. Mr. K. L. M.		Member		1010, Canal Road, Cuttack	
14. Mr. N. O. P.		Member		1111, Market Road, Bhopal	
15. Mr. Q. R. S.		Member		1212, Station Road, Jaipur	
16. Mr. T. U. V.		Member		1313, Hill Road, Udaipur	
17. Mr. W. X. Y.		Member		1414, Canal Road, Varanasi	
18. Mr. Z. A. B.		Member		1515, Market Road, Allahabad	
19. Mr. C. D. E.		Member		1616, Station Road, Gorakhpur	
20. Mr. F. G. H.		Member		1717, Canal Road, Patna	



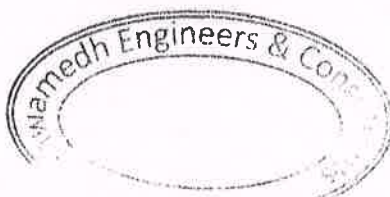
SECRETARY
 NATIONAL INSTITUTE OF PUBLIC HEALTH
 NEW DELHI

FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/12/18/5913 (2) AA/12/18/5914	Report Date	25/12/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	5. Near Wagon Tippler (Source) 6. Near D.M.Plant (Background)	Date-Sampling	18/12/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	20/12/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	20/12/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	23/12/2018

Meteorological Data / Environmental Conditions				
Average Wind Velocity - km/h	Wind Direction	Relative Humidity (Max./Min.): - %	Temperature (Max./Min.): - °C	Duration of Survey
Parameter	Results		Unit	Method
	(5)	(6)		
Respirable Suspended Particulate Matter (RSPM)	664	157	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	1495	444	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	15	10	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2,
Nitrogen Dioxide (NO ₂)	23	16	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Himad Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



End of Report

Note:

- The result listed refer only to the tested sample(s) and applicable parameter(s).
- This report is not to be reproduced except in full, without written approval of the laboratory.
- Perishable samples will be disposed immediately after report dispatch.
- Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.



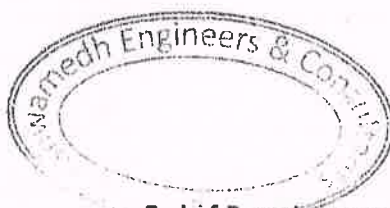
FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/12/18/5864 (2) AA/12/18/5865	Report Date	25/12/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	7. Near AHP (Source) 8. Near ID Fan Outlet (Background)	Date-Sampling	19/12/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	20/12/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	20/12/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	24/12/2018

Meteorological Data / Environmental Conditions

Average Wind Velocity - km/h	Wind Direction -	Relative Humidity (Max./Min.): - %	Temperature (Max./Min.): - °C	Duration of Survey -
Parameter	Results		Unit	Method
	(7)	(8)		
Respirable Suspended Particulate Matter (RSPM)	257	142	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	672	359	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	15	12	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2,
Nitrogen Dioxide (NO ₂)	24	20	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


Minad Soundankar
Technical Manager (Chemical)
AUTHORISED SIGNATORY



End of Report

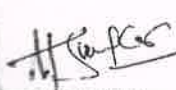
Note:

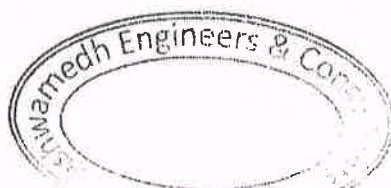
- The result listed refer only to the tested sample(s) and applicable parameter(s).
- This report is not to be reproduced except in full, without written approval of the laboratory.
- Perishable samples will be disposed immediately after report dispatch.
- Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.

FUGITIVE DUST EMISSION MONITORING REPORT

Sample / Report No.	(1) AA/12/18/5866 (2) AA/12/18/5867	Report Date	25/12/2018
Name and Address of Customer	Maharashtra State Power Generation Company Ltd. (1X500 MW) Khaperkheda Thermal Power Station, Khaperkheda.		
Sample Collected By	Laboratory	Sample Description/ Type	Fugitive Air
Sampling Location	09. Near Coal Stock Yard (S) 10. Near CHP Security Office (B)	Date-Sampling	19/12/2018
Sampling Procedure	As per Method Reference	Date-Receipt of Sample	21/12/2018
Sample Quantity/ Packing	RSPM: Filter Paper: 1 x 1 no. each Cy. Cup: 1 x 3 no. Bag each SO ₂ : 30 ml x 2 no. plastic bottle each NO ₂ : 30 ml x 2 no. plastic bottle each	Date-Start of Analysis	21/12/2018
Order Reference	KPKD/4500090496/WTP-I/PO-0240 Dt. 06 FEB 2018	Date-Completion of Analysis	24/12/2018

Meteorological Data / Environmental Conditions				
Average Wind Velocity - km/h	Wind Direction -	Relative Humidity (Max./Min.): - %	Temperature (Max./Min.): - °C	Duration of Survey
Parameter	Results		Unit	Method
	(9)	(10)		
Respirable Suspended Particulate Matter (RSPM)	328	168	µg/m ³	IS 5182 (Part 23): 2006, (Gravimetric Method)
Suspended Particulate Matter (SPM)	959	455	µg/m ³	IS 5182 (Part 4): 1999, Reaffirmed 2005 (High Volume Method)
Sulphur Dioxide (SO ₂)	14	12	µg/m ³	IS 5182 (Part 2): 2001, Reaffirmed 2006, WI/SAP-AA/5/2.
Nitrogen Dioxide (NO ₂)	24	20	µg/m ³	IS 5182 (Part 6): 2006, WI/SAP-AA/5/3


 Nirad Soundankar
 Technical Manager (Chemical)
 AUTHORISED SIGNATORY



End of Report

Note:

- The result listed refer only to the tested sample(s) and applicable parameter(s).
- This report is not to be reproduced except in full, without written approval of the laboratory.
- Perishable samples will be disposed immediately after report dispatch.
- Non-perishable samples will be stored for 15 days to one month after report dispatch or as per the regulatory norms.

AEC/F/REP/1-B

Page no.1 of 1

ASH GENERATION & UTILIZATION: PERIOD APR-17 TO MAR-18

Months	Ash Generated (MT)	Ash Utilization (MT)	% Ash Utilization	Breakup of Ash Utilization							
				Fly Ash from Power Station Premises (MT)				Pond Ash (MT)			
				Cement	SSI	Fertilizer	Asbestos	Others	Bricks & Others	Raising of Ash Bund	Land Fill/ Mine Fill
Apr-17	214043.95	84240.42	39.36%	0.0	17587.42	0.0	0.0	0.0	20653	46000	0.0
May-17	204814.24	57659.35	28.15%	0.0	17093.35	0.0	0.0	0.0	8566	32000	0.0
Jun-17	172006.60	38818.98	22.57%	0.0	16818.98	0.0	0.0	0.0	0.0	22000	0.0
Jul-17	59377.92	54685.57	92.10%	0.0	9185.57	0.0	0.0	0.0	500	45000	0.0
Aug-17	135382.39	16313.63	12.05%	0.0	7343.63	0.0	0.0	0.0	570	8400	0.0
Sep-17	67512.11	8640.08	12.80%	0.0	8640.08	0.0	0.0	0.0	0.0	0.00	0.0
Oct-17	142507.92	40864.82	28.68%	0.0	10864.85	0.0	0.0	0.0	0	30000	0.0
Nov-17	145100.14	63057.05	42.65%	0.0	15597.05	0.0	0.0	0.0	15460	32000	0.0
Dec-17	155524.38	66335.58	42.79%	0.0	18468.58	0.0	0.0	0.0	19867	28000	0.0
Jan-18	179534.73	76828.33	42.79%	0.0	25298.33	0.0	0.0	0.0	29530	22000	0.0
Feb-18	126861.55	56486.45	44.53%	0.0	23076.45	0.0	0.0	0.0	21410	12000	0.0
Mar-18	176987.89	68978.48	38.97%	0.0	18562.48	0.0	0.0	0.0	20416	30000	0.0
Total	1779653.82	632908.74	35.56%	0.0	188536.77	0.00	0.00	0.00	136972	307400	0.0
Per Day	4943.48	1758.08	-	-	523.71	-	-	-	380.48	853.89	-
Per Month	148304.49	52742.40	-	-	15711.40	-	-	-	11414.33	25616.67	-

MD
Chief Engineer (O&M)
Khaperkheda TPS

Asi

ASH GENERATION & UTILIZATION: PERIOD APR-18 TO DEC-18

Months	Ash Generated (MT)	Ash Utilization (MT)	% Ash Utilization	Breakup of Ash Utilization						
				Fly Ash from Power Station Premises (MT)				Pond Ash (MT)		
				Cement	SSI	Fertilizer	Asbestos	Others	Bricks & Others	Raising of Ash Bund
Apr-18	238028.46	48118.83	20.22%	0.0	20382.83	0.0	0.0	0.0	22736.00	5000.00
May-18	274963.66	36827.52	13.39%	0.0	23450.52	0.0	0.0	0.0	13377.00	0.00
Jun-18	179050.75	19729.04	11.02%	0.0	16979.04	0.0	0.0	0.0	2750.00	0.00
Jul-18	136030.61	10998.60	8.09%	0.0	10998.60	0.0	0.0	0.0	0.00	0.00
Aug-18	179545.34	12464.33	6.94%	0.0	12464.33	0.0	0.0	0.0	0.00	0.00
Sep-18	189295.87	17591.25	9.29%	0.0	17591.25	0.0	0.0	0.0	0.00	0.00
Oct-18	250104.95	35966.30	14.38%	0.0	31741.30	0.0	0.0	0.0	4225.00	0.00
Nov-18	233853.52	21278.02	9.10%	0.0	13014.02	0.0	0.0	0.0	8264.00	0.00
Dec-18	247463.51	35119.96	14.19%	0.0	21331.96	0.0	0.0	0.0	13788.00	0.00
Total	1928337	238094	12.35%	0.0	167953.85	0.00	0.00	0.00	65140.00	5000.00
Per Day	7141.98	881.83	-	-	622.05	-	-	-	241.26	18.52
Per Month	214259.66	26454.88	-	-	18661.53	-	-	-	7237.78	555.56

[Signature]
Chief Engineer (O&M)
Khaperkheda TPS

[Signature]

Action Plan For 100% Ash UTILIZATION AT Khaperkheda TPS

1) Formation of industrial cluster for in vicinity of Power Station:

30 Hector Land is made available near Waregaon ash bund. Work of 33 KV Sub Station at proposed cluster started by MAHADISCOM on 12.03.2018.

Expression of Interest (EOI) was published, Total 40 Nos of applications were received from the industry. Out of this, 10 are big users (Approx. 1000MT/Day). Technical Scrutiny & Project Feasibility study is under process.

M/s TULS Corp. Pvt. Ltd. Thane is appointed for Technical & Project Management Consultancy. Draft DPR for infrastructure development activities to be taken up in the proposed fly ash based industrial cluster is approved & preparation of Final DPR is under process.

2) Registration of more SSI Units engaged to fulfil 20% quota:

At present 34 SSI units are registered.

3) Signing MoU & formation of joint ventures with Cement and other ash based Industries to fulfill 80% quota: Through MAHAGAMS H.O. is in progress.

4) E – auction for sale of Dry Fly Ash through M/s MSTC :

MSPGCL, H.O. has placed Work Order No. CE(CPA)/SM/e-auction/DFA/2018-19/MSTC/3132, dtd. 21.03.2018 on M/s MSTC Ltd. Mumbai as service provider for sale of dry fly ash through e-auction. Proposal for e-auction of dry fly ash is submitted to M/s MSTC Ltd., Mumbai. M/s MSTC Ltd. directed to incorporate certain conditions. The revision of proposal is under process and same will be submitted to M/s MSTC Ltd., Mumbai shortly.

E-Auction Quantity 12,00,000 MT /Year for Unit-3,4&5

5) Open Tender for sale of ash:

6) Tender for sale of 2000 MT/day was published. But, no suitable vendors participated in the tender even after refloating the tender 3-4 times.

7) Utilization of pond ash for national Highway Projects:

At present pond ash is being utilized by Brick Manufacturers SSI units and For Ash Dyke Raising. Efforts are being taken to utilize this ash for Highways & Road Construction, for Land & Mine Filling in the vicinity.

As a result we are in receipt of queries regarding ash requirement by NHAI Road Project in nearby area. Exact quantity of utilization may be furnished once utilization starts on regular basis.


Chief Engineer (O&M)
Khaperkheda TPS



KHAPERKHEDA THERMAL POWER STATION					
ASH DISPOSAL PLAN					
Commisssioned Year: Unit I - 1989; Unit II - 1990; Unit III - 2000; Unit IV - 2001 & Unit V - 2012					
Plant Life : Unit I - 29 Yrs; Unit II - 28 Yrs; Unit III - 18 Yrs; Unit IV - 17 Yrs & Unit V - 6 Yrs					
Year	PLF (%)	Ash (%)	Ash Generation (MT)	Expected Ash Utilization (%)	Remark
2017-18	85	34	2232000.04	100%	1) 70% Ash will be utilized in dry form & it will be used for Cement /Bricks/Blocks/Small Scale Industries/Others 2) 30% pond ash will be given to locals/Agriculture/Land fill/Ash dyke raising/road Construction etc.
2018-19	85	34	2232000.04	100%	
2019-20	85	34	2232000.04	100%	
2020-21	85	34	2232000.04	100%	
2021-22	85	34	2232000.04	100%	
Constralnts: Major users of ash are Cement companies. But, Cement companies are not available in the vicinity of Khaperkheda TPS					


Chief Engineer (O&M)
Khaperkheda TPS



KHAPERKHEDA THERMAL POWER STATION						
YEAR WISE ASH UTILIZATION						
Year	4 X 210 MW KPKD TPS			1 X 500 MW KPKD TPS		
	Ash Generated (MT)	Ash Utilization (MT)	Ash Utilization (%)	Ash Generated (MT)	Ash Utilization (MT)	Ash Utilization (%)
2010-11	1433156	1360018	94.90%	-	-	-
2011-12	1361701	1550067	113.83%	-	-	-
2012-13	1677623	1286725	76.70%	718219	NIL	NIL
2013-14	1542142.9	1275284	81.47%	772494	NIL	NIL
2014-15	1350809.22	789123.53	60.88%	905261	360	0.52
2015-16	1358048.87	1173557.47	86.41%	719280	24188	3.36
2016-17	1036193.225	646754.48	62.41%	982127	84484	8.60
4 x 210 MW + 1 x 500 MW						
2017-18	1779653.82	632908.74	35.56%	-	-	-
Apr-18 to Dec-18	1928337	238094	12.35%	-	-	-
MPCB Consent Ash	5127 MT/Day			3104 MT/Day		


Chief Engineer (O&M)
Khaperkheda TPS



Annexure - 4



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022

जहाँ है हरियाली।
वहाँ है खुशहाली।।



SMS

Report Outward No.	MEPL/KPKD/2018-19/305	Report Date	12.10.2018
Name of Client	Khaparkheda Thermal Power Station	Address	Khaparkheda, Dist-Nagpur
Sample Description	Ground water samples [Suradevi Well]	Sample Reference	1819/W/756
Description of sample when received	Liquid	Quantity of sample	1 Lit
Sample drawn by	MEPL Team	Sample collection date	29.09.2018
Date of Analysis started	01.10.2018	Sample Received date	01.10.2018
Date of analysis completed	09.10.2018	Testing Period	9 Days

TABLE: GROUND WATER QUALITY REPORT

S.N	Name of Parameter	Unit	Method Reference	As per IS 10500:2012		Result
				Desirable	Permissible	
1	Color	Hazen	IS: 3025 (Part 4)-1983 (RA-2006)	5	25	BDL
2	Odour	--	IS:3025 (Part 5) - 2012	AG	AG	AG
3	Taste	-	IS :3025(Part-8) -1984	AG	AG	AG
4	Turbidity	NTU	IS: 3025 (Part 10)-1984 (RA-2002)	-	-	BDL
5	pH at 25°C		IS: 3025 (Part 11)- 1983 (RA-2006)	6.5-8.5	NR	7.01
6	Specific Conductivity at 25 °C	µs/cm	IS: 3025 (Part 14)-1984 (RA-2002)			1101
7	Total Dissolved Solids	mg/L	IS: 3025 (Part 16)-1984 (RA-2006)	500	2000	716
8	Total Suspended Solids	mg/L	IS: 3025 (Part 17)-1984 (RA-1996)	-	-	BDL
9	Total Hardness as CaCO ₃	mg/L	IS: 3025 (Part 21)-2009	200	600	360
10	Total Alkalinity as CaCO ₃	mg/L	IS: 3025 (Part 23)-1986 (RA-2003)	200	600	124
11	Chloride as Cl	mg/L	IS: 3025 (Part 32)-1988 (RA-2009)	250	1000	126
12	Calcium as Ca++	mg/L	IS: 3025 (Part 40)-1991 (RA-2003)	75	200	86
13	Magnesium as Mg++	mg/L	IS: 3025 (Part 46)-1994 (RA-2003)	30	100	35
14	Fluoride as F	mg/L	APHA 22nd edition 2012 4500-FD	1.0	1.5	<0.5
15	Nitrate as NO ₃	mg/L	IS: 3025 (Part 34)-1988	45	NR	191
16	Iron as Fe	mg/L	IS: 3025 (Part 53)-2003	0.3	NR	0.16
17	Sulphate as SO ₄	mg/L	IS: 3025 (Part 24)-1986 (RA-2003,09)	200	400	59
18	Ammonia	mg/L	IS: 3025 (Part 34)-1988	-	-	BDL
19	Zinc as Zn	mg/L	IS: 3025 (Part 49)-1994 (RA-2003)	5	15	0.09
20	Chemical Oxygen Demand	mg/L	IS: 3025 (Part 58)-2006	-	-	48
21	BOD for 3days at 27°C	mg/L	IS: 3025 (Part 44)-1993 (RA-2003)	-	-	<3.0
22	Dissolved Oxygen (DO)	mg/L	IS:3025 (Part 38) -1989	-	-	6.8
23	Cadmium as Cd	mg/L	IS: 3025 (Part 41)-1992 (RA-2003)	0.003	NR	BDL
24	Copper as Cu	mg/L	IS: 3025 (Part 42)-1992 (RA-2003)	0.05	1.5	ND
25	Phenolic Compound	mg/L	IS: 3025 (Part 43)-2003 (RA-2003)	0.001	0.002	ND
26	Total Chromium	mg/L	IS: 3025 (Part 52)-2003	0.05	NR	ND
27	Lead	mg/L	IS: 3025 (Part 44)-1994 (RA-2003)	0.01	NR	ND
28	Nickel	mg/L	IS:3025 (Part 54)-2003	0.02	NR	ND
29	Arsenic as As	mg/L	IS: 3025 (Part 37)-1988	0.01	NA	ND
30	Mercury as Hg	mg/L	IS:3025 (Part 39) -2013 (RA-2003)	1	5	<1.0



Site Off. : CHWPS, Mandwa, Bhatnagar Ind. Estate, Bhatnagar, Nagpur.

Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

CIN. U40105MH2005PLC150780

MAHARASHTRA
ENVIRO POWER LIMITED
(NAGPUR UNIT)



जहाँ है हरियाली।
यहाँ है खुशहाली।।

'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022



31	Phosphate as PO ₄	mg/L	APHA 22nd Edition 2012	-	-	<0.1
32	Silica as Si	mg/L	APHA 22nd Edition 2012	-	-	8.7
33	Cyanide	mg/L	IS:3025 (Part 27) (1986)	-	-	ND
34	Pesticides	mg/L	USEPA -508	-	-	ND
35	PCB	mg/L	ASTM-5175	-	-	ND
36	PAH	mg/L	APHA -6440	-	-	ND
37	Boron	mg/L	IS:3025 (Part 37) (2004)	-	-	ND
38	Trihalomethane	mg/L	APHA -6232	-	-	ND
39	Mercury	mg/L	IS:3025 (Part 48) - 1994	-	-	ND
40	Total Plate Count	cfu/100 ml	IS: 1622-1981	Absent	Absent	<2X10 ¹
41	E.Coli	MPN/100ml	IS: 1622-1981	Absent	Absent	Absent
42	Most Probable No.	MPN/100ml	IS:1622-1981	Absent	Absent	BDL

GW-1 - Suradevi Borewell

Note:

- NR- No Relaxation
- This report may not be reproduced in parts, without the permission of this laboratory.

For Maharashtra Enviro Power Limited,

Dr.D.G.Battalwar
Government Analyst



ISO 9001 : 2008 C No. : 48121/A/001/UKES
ISO 14001 : 2004 C No. : 48121/B/001/UKES
OHSAS 18001 : 2007 C No. : 48121/C/001/UKES

Site Off. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.

Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

CIN- U40105MH2005PLC150780

**MAHARASHTRA
ENVIRO POWER LIMITED**
(NAGPUR UNIT)



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022

जहाँ है हरियाली।
वहाँ है खुशहाली।।



Report Outward No.	MEPL/KPKD/2018-19/305	Report Date	12.10.2018
Name of Client	Khaparkheda Thermal Power Station	Address	Khaparkheda , Dist-Nagpur
Sample Description	Ground water samples [Meshram House]	Sample Reference : 1819/W/757	
Description of sample when received	Liquid	Quantity of sample	1 Lit
Sample drawn by	MEPL Team	Sample collection date	29.09.2018
Date of Analysis started	01.10.2018	Sample Received date	01.10.2018
Date of analysis completed	09.10.2018	Testing Period	9 Days

TABLE: GROUND WATER QUALITY REPORT

S.N	Name of Parameter	Unit	Method Reference	As per IS 10500:2012		Result
				Desirable	Permissible	
1	Color	Hazen	IS: 3025 (Part 4)-1983 (RA-2006)	5	25	BDL
2	Odour	--	IS:3025 (Part 5) - 2012	AG	AG	AG
3	Taste	-	IS :3025(Part-8) -1984	AG	AG	AG
4	Turbidity	NTU	IS: 3025 (Part 10)-1984 (RA-2002)	-	-	BDL
5	pH at 25°C		IS: 3025 (Part 11)- 1983 (RA-2006)	6.5-8.5	NR	7.51
6	Specific Conductivity at 25 °C	µs/cm	IS: 3025 (Part 14)-1984 (RA-2002)			3630
7	Total Dissolved Solids	mg/L	IS: 3025 (Part 16)-1984 (RA-2006)	500	2000	2312
8	Total Suspended Solids	mg/L	IS: 3025 (Part 17)-1984 (RA-1996)	-	-	BDL
9	Total Hardness as CaCO ₃	mg/L	IS: 3025 (Part 21)-2009	200	600	1040
10	Total Alkalinity as CaCO ₃	mg/L	IS: 3025 (Part 23)-1986 (RA-2003)	200	600	376
11	Chloride as Cl	mg/L	IS: 3025 (Part 32)-1988 (RA-2009)	250	1000	350
12	Calcium as Ca ⁺⁺	mg/L	IS: 3025 (Part 40)-1991 (RA-2003)	75	200	249
13	Magnesium as Mg ⁺⁺	mg/L	IS: 3025 (Part 46)-1994 (RA-2003)	30	100	100
14	Fluoride as F	mg/L	APHA 22nd edition 2012 4500-F'D	1.0	1.5	<0.5
15	Nitrate as NO ₃	mg/L	IS: 3025 (Part 34)-1988	45	NR	817
16	Iron as Fe	mg/L	IS: 3025 (Part 53)-2003	0.3	NR	0.19
17	Sulphate as SO ₄	mg/L	IS: 3025 (Part 24)-1986 (RA-2003,09)	200	400	85.0
18	Ammonia	mg/L	IS: 3025 (Part 34)-1988	-	-	BDL
19	Zinc as Zn	mg/L	IS: 3025 (Part 49)-1994 (RA-2003)	5	15	0.12
20	Chemical Oxygen Demand	mg/L	IS: 3025 (Part 58)-2006	-	-	52.0
21	BOD for 3days at 27°C	mg/L	IS: 3025 (Part 44)-1993 (RA-2003)	-	-	<3.0
22	Dissolved Oxygen (DO)	mg/L	IS:3025 (Part 38) -1989	-	-	5.3
23	Cadmium as Cd	mg/L	IS: 3025 (Part 41)-1992 (RA-2003)	0.003	NR	BDL
24	Copper as Cu	mg/L	IS: 3025 (Part 42)-1992 (RA-2003)	0.05	1.5	ND
25	Phenolic Compound	mg/L	IS: 3025 (Part 43)-2003 (RA-2003)	0.001	0.002	ND
26	Total Chromium	mg/L	IS: 3025 (Part 52)-2003	0.05	NR	ND
27	Lead	mg/L	IS: 3025 (Part 44)-1994 (RA-2003)	0.01	NR	ND
28	Nickel	mg/L	IS:3025 (Part 54)-2003	0.02	NR	ND
29	Arsenic as As	mg/L	IS: 3025 (Part 37)-1988	0.01	NA	ND
		mg/L	IS:3025 (Part 39) - 2012 (RA-2003)	1	5	<1.0



Site Off. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.
Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

ISO 9001 : 2008 C No. : 49121/0001/0001
ISO 14001 : 2004 C No. : 49121/0001/0001
OHSAS 18001 : 2007 C No. : 49121/0001/0001

CIN : U40105MH2005PLC150780

MAHARASHTRA
ENVIRO POWER LIMITED
(NAGPUR UNIT)



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022

जहाँ है हरियाली,
वहाँ है खुशहाली।।



SMS

31	Phosphate as PO ₄	mg/L	APHA 22nd Edition 2012	-	-	<0.1
32	Silica as Si	mg/L	APHA 22nd Edition 2012	-	-	6.6
33	Cyanide	mg/L	IS:3025 (Part 27) (1986)	-	-	ND
34	Pesticides	mg/L	USEPA -508	-	-	ND
35	PCB	mg/L	ASTM-5175	-	-	ND
36	PAH	mg/L	APHA -6440	-	-	ND
37	Boron	mg/L	IS:3025 (Part 37) (2004)	-	-	ND
38	Trihalomethane	mg/L	APHA -6232	-	-	ND
39	Mercury	mg/L	IS:3025 (Part 48) - 1994	-	-	ND
40	Total Plate Count	cfu/100 ml	IS: 1622-1981	Absent	Absent	<2X10 ¹
41	E.Coli	MPN/100ml	IS: 1622-1981	Absent	Absent	Absent
42	Most Probable No.	MPN/100ml	IS:1622-1981	Absent	Absent	BDL

GW-2 – Bore well at Meshram House

Note:

- NR- No Relaxation
- This report may not be reproduced in parts, without the permission of this laboratory.

For Maharashtra Enviro Power Limited,

Dr.D.G.Battalvi
Government Analyst



Site Off. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.

Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web : www.smsl.co.in

CIN : U04015MH2005PLC150080

**MAHARASHTRA
ENVIRO POWER LIMITED**

(NAGPUR UNIT)

ISO 9001 : 2008 C No. : 49121/A001/ACC-
ISO 14001 : 2004 C No. : 49121/B001/ACC-
OHSAS 18001 : 2007 C No. : 49121/C001/ACC-



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022

जहाँ है हरियाली।
यहाँ है सुराहाली।।



SMS

Report Outward No.	MEPL/KPKD/2018-19/305	Report Date	12.10.2018
Name of Client	Khaparkheda Thermal Power Station	Address	Khaparkheda, Dist-Nagpur
Sample Description	Ground water samples [Near Bina]	Sample Reference : 1819/W/758	
Description of sample when received	Liquid	Quantity of sample	1 Lit
Sample drawn by	MEPL Team	Sample collection date	29.09.2018
Date of Analysis started	01.10.2018	Sample Received date	01.10.2018
Date of analysis completed	09.10.2018	Testing Period	9 Days

TABLE: GROUND WATER QUALITY REPORT

S.N	Name of Parameter	Unit	Method Reference	As per IS 10500:2012		Result
				Desirable	Permissible	
1	Color	Hazen	IS: 3025 (Part 4)-1983 (RA-2006)	5	25	BDL
2	Odour	--	IS:3025 (Part 5) - 2012	AG	AG	AG
3	Taste	-	IS :3025(Part-8) -1984	AG	AG	AG
4	Turbidity	NTU	IS: 3025 (Part 10)-1984 (RA-2002)	-	-	BDL
5	pH at 25°C		IS: 3025 (Part 11)- 1983 (RA-2006)	6.5-8.5	NR	7.83
6	Specific Conductivity at 25 °C	µs/cm	IS: 3025 (Part 14)-1984 (RA-2002)			1090
7	Total Dissolved Solids	mg/L	IS: 3025 (Part 16)-1984 (RA-2006)	500	2000	716
8	Total Suspended Solids	mg/L	IS: 3025 (Part 17)-1984 (RA-1996)	-	-	BDL
9	Total Hardness as CaCO ₃	mg/L	IS: 3025 (Part 21)-2009	200	600	372
10	Total Alkalinity as CaCO ₃	mg/L	IS: 3025 (Part 23)-1986 (RA-2003)	200	600	312
11	Chloride as Cl	mg/L	IS: 3025 (Part 32)-1988 (RA-2009)	250	1000	82
12	Calcium as Ca ⁺⁺	mg/L	IS: 3025 (Part 40)-1991 (RA-2003)	75	200	89
13	Magnesium as Mg ⁺⁺	mg/L	IS: 3025 (Part 46)-1994 (RA-2003)	30	100	36
14	Fluoride as F	mg/L	APHA 22nd edition 2012 4500-FD	1.0	1.5	<0.5
15	Nitrate as NO ₃	mg/L	IS: 3025 (Part 34)-1988	45	NR	57
16	Iron as Fe	mg/L	IS: 3025 (Part 53)-2003	0.3	NR	0.17
17	Sulphate as SO ₄	mg/L	IS: 3025 (Part 24)-1986 (RA-2003,09)	200	400	42
18	Ammonia	mg/L	IS: 3025 (Part 34)-1988	-	-	<BDL
19	Zinc as Zn	mg/L	IS: 3025 (Part 49)-1994 (RA-2003)	5	15	0.10
20	Chemical Oxygen Demand	mg/L	IS: 3025 (Part 58)-2006	-	-	52.0
21	BOD for 3days at 27°C	mg/L	IS: 3025 (Part 44)-1993 (RA-2003)	-	-	<3.0
22	Dissolved Oxygen (DO)	mg/L	IS:3025 (Part 38) -1989	-	-	5.4
23	Cadmium as Cd	mg/L	IS: 3025 (Part 41)-1992 (RA-2003)	0.003	NR	BDL
24	Copper as Cu	mg/L	IS: 3025 (Part 42)-1992 (RA-2003)	0.05	1.5	ND
25	Phenolic Compound	mg/L	IS: 3025 (Part 43)-2003 (RA-2003)	0.001	0.002	ND
26	Total Chromium	mg/L	IS: 3025 (Part 52)-2003	0.05	NR	ND
27	Lead	mg/L	IS: 3025 (Part 44)-1994 (RA-2003)	0.01	NR	ND
28	Nickel	mg/L	IS:3025 (Part 54)-2003	0.02	NR	ND
29	Arsenic as As	mg/L	IS: 3025 (Part 37)-1988	0.01	NA	ND
30	Oil & Grease	mg/L	IS:3025 (Part 39) - 2012 (RA-2003)	1	5	<1.0



Site Off. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.

Landline M. : 8805947186, 9923037416

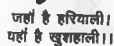
Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

CIN- U40015MH2008PLC150780

ISO 9001 : 2008 C No. : 49121/0000000000
ISO 14001 : 2004 C No. : 49121/0000000000
OHSAS 18001 : 2007 C No. : 49121/0000000000

MAHARASHTRA
ENVIRO POWER LIMITED
(NAGPUR UNIT)



31	Phosphate as PO ₄	mg/L	APHA 22nd Edition 2012	-	-	0.0636
32	Silica as Si	mg/L	APHA 22nd Edition 2012	-	-	4.2
33	Cyanide	mg/L	IS:3025 (Part 27) (1986)	-	-	ND
34	Pesticides	mg/L	USEPA -508	-	-	ND
35	PCB	mg/L	ASTM-5175	-	-	ND
36	PAH	mg/L	APHA -6440	-	-	ND
37	Boron	mg/L	IS:3025 (Part 37) (2004)	-	-	ND
38	Trihalomethane	mg/L	APHA -6232	-	-	ND
39	Mercury	mg/L	IS:3025 (Part 48) - 1994	-	-	ND
40	Total Plate Count	cfu/100 ml	IS: 1622-1981	Absent	Absent	<2X10 ¹
41	E.Coli	MPN/100ml	IS: 1622-1981	Absent	Absent	Absent
42	Most Probable No.	MPN/100ml	IS:1622-1981	Absent	Absent	BDL

GW-3 – Bore well at Bina

GW-3 – Bore well at Bina

Note:

- NR- No Relaxation
- This report may not be reproduced in parts, without the permission of this laboratory.

For Maharashtra Electric Power Limited,

Dr.D.G.Battalwar
Government Ana



Site Off. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.
Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)
Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

ISO 9001 : 2008 C No. : 41021
ISO 14001 : 2004 C No. : 41021
OHSAS 18001 : 2007 C No. : 41021

**MAHARASHTRA
ENVIRO POWER LIMITED**
(NAGPUR UNIT)



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022

जहाँ है हरियाली।
वहाँ है सुराहाली।।



SMS

Report Outward No.	MEPL/KPKD/2018-19/305	Report Date	12.10.2018
Name of Client	Khaparkheda Thermal Power Station	Address	Khaparkheda, Dist-Nagpur
Sample Description	Ground water samples [Kawatha]	Sample Reference	1819/W/759
Description of sample when received	Liquid	Quantity of sample	1 Lit
Sample drawn by	MEPL Team	Sample collection date	29.09.2018
Date of Analysis started	01.10.2018	Sample Received date	01.10.2018
Date of analysis completed	09.10.2018	Testing Period	9 Days

TABLE: GROUND WATER QUALITY REPORT

S.N	Name of Parameter	Unit	Method Reference	As per IS 10500:2012		Result
				Desirable	Permissible	
1	Color	Hazen	IS: 3025 (Part 4)-1983 (RA-2006)	5	25	BDL
2	Odour	--	IS:3025 (Part 5) - 2012	AG	AG	AG
3	Taste	-	IS :3025(Part-8) -1984	AG	AG	AG
4	Turbidity	NTU	IS: 3025 (Part 10)-1984 (RA-2002)	-	-	BDL
5	pH at 25°C		IS: 3025 (Part 11)- 1983 (RA-2006)	6.5-8.5	NR	7.91
6	Specific Conductivity at 25 °C	µs/cm	IS: 3025 (Part 14)-1984 (RA-2002)			1273
7	Total Dissolved Solids	mg/L	IS: 3025 (Part 16)-1984 (RA-2006)	500	2000	835
8	Total Suspended Solids	mg/L	IS: 3025 (Part 17)-1984 (RA-1996)	-	-	BDL
9	Total Hardness as CaCO ₃	mg/L	IS: 3025 (Part 21)-2009	200	600	488
10	Total Alkalinity as CaCO ₃	mg/L	IS: 3025 (Part 23)-1986 (RA-2003)	200	600	286
11	Chloride as Cl	mg/L	IS: 3025 (Part 32)-1988 (RA-2009)	250	1000	62
12	Calcium as Ca ⁺⁺	mg/L	IS: 3025 (Part 40)-1991 (RA-2003)	75	200	117
13	Magnesium as Mg ⁺⁺	mg/L	IS: 3025 (Part 46)-1994 (RA-2003)	30	100	47
14	Fluoride as F	mg/L	APHA 22nd edition 2012 4500-F'D	1.0	1.5	<0.5
15	Nitrate as NO ₃	mg/L	IS: 3025 (Part 34)-1988	45	NR	150
16	Iron as Fe	mg/L	IS: 3025 (Part 53)-2003	0.3	NR	0.20
17	Sulphate as SO ₄	mg/L	IS: 3025 (Part 24)-1986 (RA-2003,09)	200	400	52
18	Ammonia	mg/L	IS: 3025 (Part 34)-1988	-	-	BDL
19	Zinc as Zn	mg/L	IS: 3025 (Part 49)-1994 (RA-2003)	5	15	0.10
20	Chemical Oxygen Demand	mg/L	IS: 3025 (Part 58)-2006	-	-	60.0
21	BOD for 3days at 27°C	mg/L	IS: 3025 (Part 44)-1993 (RA-2003)	-	-	<3.0
22	Dissolved Oxygen (DO)	mg/L	IS:3025 (Part 38) -1989	-	-	5.1
23	Cadmium as Cd	mg/L	IS: 3025 (Part 41)-1992 (RA-2003)	0.003	NR	BDL
24	Copper as Cu	mg/L	IS: 3025 (Part 42)-1992 (RA-2003)	0.05	1.5	ND
25	Phenolic Compound	mg/L	IS: 3025 (Part 43)-2003 (RA-2003)	0.001	0.002	ND
26	Total Chromium	mg/L	IS: 3025 (Part 52)-2003	0.05	NR	ND
27	Lead	mg/L	IS: 3025 (Part 44)-1994 (RA-2003)	0.01	NR	ND
28	Nickel	mg/L	IS:3025 (Part 54)-2003	0.02	NR	ND
29	Arsenic as As	mg/L	IS: 3025 (Part 37)-1988	0.01	NA	ND
30	Oil & Grease	mg/L	IS:3025 (Part 39) - 2012 (RA-2003)	1	5	<1.0



Site Off. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.

Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712-7125000, 7125200 Fax : 0712-6665100, Web. : www.smsl.co.in

ISO 9001 : 2008 C No. : 08224000000

ISO 14001 : 2004 C No. : 08224000000

OHSAS 18001 : 2007 C No. : 08224000000

**MAHARASHTRA
ENVIRO POWER LIMITED**

(NAGPUR UNIT)



जहाँ है हरियाली।
वहाँ है सुरक्षा।

'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022



31	Phosphate as PO ₄	mg/L	APHA 22nd Edition 2012	-	-	0.0031
32	Silica as Si	mg/L	APHA 22nd Edition 2012	-	-	4.7
33	Cyanide	mg/L	IS:3025 (Part 27) (1986)	-	-	ND
34	Pesticides	mg/L	USEPA -508	-	-	ND
35	PCB	mg/L	ASTM-5175	-	-	ND
36	PAH	mg/L	APHA -6440	-	-	ND
37	Boron	mg/L	IS:3025 (Part 37) (2004)	-	-	ND
38	Trihalomethane	mg/L	APHA -6232	-	-	ND
39	Mercury	mg/L	IS:3025 (Part 48) - 1994	-	-	ND
40	Total Plate Count	cfu/100 ml	IS: 1622-1981	Absent	Absent	<2X10 ⁴
41	E.Coli	MPN/100ml	IS: 1622-1981	Absent	Absent	Absent
42	Most Probable No.	MPN/100ml	IS:1622-1981	Absent	Absent	BDL

GW-4 – Bore well at Kawatha

Note:

- NR- No Relaxation
- This report may not be reproduced in parts, without the permission of this laboratory.

For Maharashtra Enviro Power Limited,

Dr.D.G.Batta
Government Analyst



ISO 9001 : 2008 C No. : 8524/01/01
ISO 14001 : 2004 C No. : 8524/01/01
OHSAS 18001 : 2007 C No. : 8524/01/01

Site OFF. : CHW01, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.
Landline M. : 8805947186, 9923037416

Head Office : 20, IT Park, Parsodi, Nagpur - 440 022, Maharashtra (India)

Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

**MAHARASHTRA
ENVIRO POWER LIMITED**

(NAGPUR UNIT)



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 08.02.2022

जहाँ है हरियाली।
यहाँ है खुशहाली।।



SMS

Report Outward No.	MEPL/KPKD/2018-19/305	Report Date	12.10.2018
Name of Client	Khaparkheda Thermal Power Station	Address	Khaparkheda, Dist-Nagpur
Sample Description	Ground water samples [Gajbhiye House]	Sample Reference	1819/W/760
Description of sample when received	Liquid	Quantity of sample	1 Lit
Sample drawn by	MEPL Team	Sample collection date	29.09.2018
Date of Analysis started	01.10.2018	Sample Received date	01.10.2018
Date of analysis completed	09.10.2018	Testing Period	9 Days

TABLE: GROUND WATER QUALITY REPORT

S.N	Name of Parameter	Unit	Method Reference	As per IS 10500:2012		Result
				Desirable	Permissible	
1	Color	Hazen	IS: 3025 (Part 4)-1983 (RA-2006)	5	25	BDL
2	Odour	--	IS:3025 (Part 5) - 2012	AG	AG	AG
3	Taste	-	IS :3025(Part-8) -1984	AG	AG	AG
4	Turbidity	NTU	IS: 3025 (Part 10)-1984 (RA-2002)	-	-	BDL
5	pH at 25°C		IS: 3025 (Part 11)- 1983 (RA-2006)	6.5-8.5	NR	7.80
6	Specific Conductivity at 25 °C	µs/cm	IS: 3025 (Part 14)-1984 (RA-2002)			1156
7	Total Dissolved Solids	mg/L	IS: 3025 (Part 16)-1984 (RA-2006)	500	2000	755
8	Total Suspended Solids	mg/L	IS: 3025 (Part 17)-1984 (RA-1996)	-	-	BDL
9	Total Hardness as CaCO ₃	mg/L	IS: 3025 (Part 21)-2009	200	600	268
10	Total Alkalinity as CaCO ₃	mg/L	IS: 3025 (Part 23)-1986 (RA-2003)	200	600	280
11	Chloride as Cl	mg/L	IS: 3025 (Part 32)-1988 (RA-2009)	250	1000	174
12	Calcium as Ca ⁺⁺	mg/L	IS: 3025 (Part 40)-1991 (RA-2003)	75	200	64
13	Magnesium as Mg ⁺⁺	mg/L	IS: 3025 (Part 46)-1994 (RA-2003)	30	100	26
14	Fluoride as F	mg/L	APHA 22nd edition 2012 4500-F'D	1.0	1.5	<0.5
15	Nitrate as NO ₃	mg/L	IS: 3025 (Part 34)-1988	45	NR	80
16	Iron as Fe	mg/L	IS: 3025 (Part 53)-2003	0.3	NR	0.19
17	Sulphate as SO ₄	mg/L	IS: 3025 (Part 24)-1986 (RA-2003,09)	200	400	68
18	Ammonia	mg/L	IS: 3025 (Part 34)-1988	-	-	BDL
19	Zinc as Zn	mg/L	IS: 3025 (Part 49)-1994 (RA-2003)	5	15	0.12
20	Chemical Oxygen Demand	mg/L	IS: 3025 (Part 58)-2006	-	-	48.0
21	BOD for 3days at 27°C	mg/L	IS: 3025 (Part 44)-1993 (RA-2003)	-	-	<3.0
22	Dissolved Oxygen (DO)	mg/L	IS:3025 (Part 38) -1989	-	-	5.2
23	Cadmium as Cd	mg/L	IS: 3025 (Part 41)-1992 (RA-2003)	0.003	NR	BDL
24	Copper as Cu	mg/L	IS: 3025 (Part 42)-1992 (RA-2003)	0.05	1.5	ND
25	Phenolic Compound	mg/L	IS: 3025 (Part 43)-2003 (RA-2003)	0.001	0.002	ND
26	Total Chromium	mg/L	IS: 3025 (Part 52)-2003	0.05	NR	ND
27	Lead	mg/L	IS: 3025 (Part 44)-1994 (RA-2003)	0.01	NR	ND
28	Nickel	mg/L	IS:3025 (Part 54)-2003	0.02	NR	ND
29	Arsenic as As	mg/L	IS: 3025 (Part 37)-1988	0.01	NA	ND
30	Oil & Grease	mg/L	IS:3025 (Part 39) - 2012 (RA-2003)	1	5	<1.0



Site OFF: CHINDI, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.

Landline M.: 8805947186, 9923037416

Head Office: 22, H Park, Parnodi, Nagpur - 440 022, Maharashtra (India)

Ph: 0712 - 7125200, 7125201 Fax: 0712 - 6665100, Web: www.smsl.co.in

ISO 9001 : 2008 C No. : 4825/07/2008

ISO 14001 : 2004 C No. : 4825/07/2004

ISO 18001 : 2007 C No. : 4825/07/2007

**MAHARASHTRA
ENVIRO POWER LIMITED**

(NAGPUR UNIT)



'MoEF' RECOGNIZED ENVIRONMENTAL LABORATORY
VALIDITY UPTO 06.02.2022

जहाँ है हरियाली।
वहाँ है खुशहाली।।



SMS

31	Phosphate as PO ₄	mg/L	APHA 22nd Edition 2012	-	-	<0.1
32	Silica as Si	mg/L	APHA 22nd Edition 2012	-	-	5.2
33	Cyanide	mg/L	IS:3025 (Part 27) (1986)	-	-	ND
34	Pesticides	mg/L	USEPA -508	-	-	ND
35	PCB	mg/L	ASTM-5175	-	-	ND
36	PAH	mg/L	APHA -6440	-	-	ND
37	Boron	mg/L	IS:3025 (Part 37) (2004)	-	-	ND
38	Trihalomethane	mg/L	APHA -6232	-	-	ND
39	Mercury	mg/L	IS:3025 (Part 48) - 1994	-	-	ND
40	Total Plate Count	cfu/100 ml	IS: 1622-1981	Absent	Absent	<2X10 ¹
41	E.Coli	MPN/100ml	IS: 1622-1981	Absent	Absent	Absent
42	Most Probable No.	MPN/100ml	IS:1622-1981	Absent	Absent	BDL

GW-5 – Bore well at Gajbhiye house

Note:

- NR- No Relaxation
- This report may not be reproduced in parts, without the permission of this laboratory.

For Maharashtra Enviro Power Limited,

Dr.D.G.Battalwar
Government Anal



ISO 9001 : 2008 C No. : 8274/08/0001
ISO 14001 : 2004 C No. : 8274/08/0001
OHSAS 18001 : 2007 C No. : 8274/08/0001

Site OFF. : CHINOI, Mandwa, Butibori Ind. Estate, Butibori, Nagpur.

Landline M. : 8805947186, 9923037416

Head Office : 20, III Park, Parsadi, Nagpur - 440 022, Maharashtra (India)


Ph. 0712 - 7125000, 7125200 Fax : 0712 - 6665100, Web. : www.smsl.co.in

**MAHARASHTRA
ENVIRO POWER LIMITED**

(NAGPUR UNIT)

DETAILS OF TREE PLANTATION

Sr.No.	Particulars	Position
1	Total factory area	721.00 Hectare
2	Total Operational Area	521.65 Hectare
3	Operational area (available for plantation in Hectare)	199.35 Hectare
4	Total progressive nos. of trees planted upto 2016-17	182690 Nos.
5	Tree planted in year 2017-18	10000 Nos.
6	Total nos of tree survival	165160 Nos.
7	Target of tree plantation in the year 2018-19	2000 Plants.
8	Total area covered under plantation so far is	120.74 Hectare
9	Land under plantation (%)	60.57 %
10	Prescribed norms as per consent (%)	33 %


Chief Engineer (O&M)
Khaperkheda TPS





MAHAGENCO
Maharashtra State Power Generation Co. Ltd.

Reg. No. U-40100 MH 2005 PLC 153648

MAHARASHTRA STATE POWER GENERATION CO. LTD.
KHAPERKHEDA THERMAL POWER STATION
(ISO 9001:2015, ISO 14001:2015, ISO 18001:2007 & ISO 50001:2011)
Office of: Chief Engineer, T.P.S., Khaperkheda, Dist. Nagpur, PIN - 441102
Phone: (07113) 268167 to 170, 266000 FAX: 268239(Off)/268123(Site)
Email - ce@mahagenco.in



सन २०१८ मधील १३ कोटी वृक्षालागवड खापरखेडा औष्णिक विद्युत केंद्र

विभागीय असुनत पत्र क. येव्हयो/स्टेनो/सीआर क.६/कवि-३८/२०१८ दि. २९.०४.२०१८.

वृक्ष लागवड उद्दीष्ट २००० रेपेटे

विभाग (औ वि.केंद्र)	जिल्हा	तालुका	गाव	कंपार्टमेंट कमांक / गट नंबर	अक्षांश - रेखांश	वृक्षारोपण तक्ष्य	खड्ड्या जंती एकूण संख्या	लागवड तक्ष्य			एकूण	लागवड टक्के
								पहिला आठवडा	दुसरा आठवडा	तिसरा आठवडा		
१	२	३	४	५	६	७	८	९	१०	११	१२	१३
औ.वि.केंद्र खापरखेडा	नागपुर	कामठी	वारेगाव राख बंधारा परीसर	१२६, १६७, १६६	21° 14' 14"N 79° 08' 51"E	४३००	४३००	बांधु लागवडीचे काम सुरु आहे. संपुर्ण झाडे २०१८ च्या पावसाळ्यात लावण्यात येतील			-	-
औ.वि.केंद्र खापरखेडा	नागपुर	सातनेर	प्रकाशनागर वसाहत औ. वि.केंद्र खापरखेडा		21° 24' 44"N 79° 12' 73"E	२०००	२०००	४ जुलै ला वृक्षारोपणाला सुरुवात झाली. सध्या ५०० झाडे लावून झाली आहेत व उर्वरीत १५०० झाडे ३१ जुलै पर्यंत लावण्यात येतील			-	-

(Signature)
Chief Engineer (O&M)
Khaperkheda TPS

(Signature)

**NOISE LEVEL MESUREMENT RECORD
MONTH OCT-2018**

Sr. No.	Location	Unit No. 5		Sr. No.	Location	Unit No. 5	
		Max	Min			Max	Min
1	PCR	56.3	53.9	12	Coal Feeder B	76.2	72.4
2	Turbine Floor	83.2	80.5	13	Coal Feeder E	81.2	79.6
3	Turbine Basement	82.9	79.8	14	Boiler Basement Area	81.1	79.2
4	6.6 K.V. Room	64.8	62.1		Coal Mill B	86.8	84.9
5	Boiler Feed Pump	71.2	69.2	15	Coal Mill E	87.5	84.9
6	Feed Pump Cabin	87.7	85.9	17	PA Fan	95.3	91.1
7	COP Cabin	70.4	66.5	18	FD Fan	92.7	90.7
8	Compressor Area	91.7	88.4	19	ID Fan	70.1	67.2
9	Compressor cabin	63.5	61.9	20	AHP Control Room	68.1	65.2
10	Firing Floor	84.5	79.3	21	AHP Compressor area	90.8	88.2
11	Firing Floor Cabin	67.9	62.3	22	AHP Pump	91.3	87.1

Sr. No.	Location	500 MW	
		Max	Min
1	GS Pump House	87.2	75.1
2	CW Pump House	86.2	76.1
3	DM Feed Water Pump	69.2	36.4
4	Oil Handling Plant	75.6	72.2
5	Crusher House	102	99.3
6	Apron Feeder	77	72.2
7	Conveyor Belt Area	85.4	83.8
8	Wagon Tippler Area	61	52
9	Unloading Bay	75.1	74.6
10	Bunker House	74.4	63.3
11	Workshop
12	AC plant	84.9	81.4
13	Coal Sampling Room	57.3	55.7

MR
**Chief Engineer (O&M)
Khaperkheda TPS**

AP

NOISE LEVEL MESUREMENT RECORD
MONTH NOV-2018

Sr. No.	Location	Unit No. 5		Sr. No.	Location	Unit No. 5	
		Max	Min			Max	Min
1	PCR	56.4	54.9	12	Coal Feeder B	83.0	86.6
2	Turbine Floor	82.5	80.7	13	Coal Feeder E	79.3	76.5
3	Turbine Basement	87.0	85.7	14	Boiler Basement Area	86.1	84.3
4	6.6 K.V. Room	64.8	62.9		Coal Mill B	87.0	86.1
5	Boiler Feed Pump	89.9	88.1	15	Coal Mill E	87.1	85.2
6	Feed Pump Cabin	68.2	67.6	17	PA Fan	94.1	92.8
7	COP Cabin	72.2	71	18	FD Fan	93.1	90.1
8	Compressor Area	88.9	86.2	19	ID Fan	74.5	71.4
9	Compressor cabin	58.2	56.4	20	AHP Control Room	70.2	67.4
10	Firing Floor	77.6	76.1	21	AHP Compressor area	90.1	89.5
11	Firing Floor Cabin	71.2	70.3	22	AHP Pump	92.4	90.5

Sr. No.	Location	500 MW	
		Max	Min
1	GS Pump House	92.4	90.5
2	CW Pump House	87.1	86
3	DM Feed Water Pump	70.9	68.2
4	Oil Handling Plant	75.8	73.7
5	Crusher House	65.9	58.2
6	Apron Feeder	70.4	68.2
7	Conveyor Belt Area	82.9	79.5
8	Wagon Tippler Area	77.9	72.9
9	Unloading Bay	79.5	78.1
10	Bunker House	79.2	77.5
11	Workshop
12	AC plant	87.5	85.2
13	Coal Sampling Room	61.2	60.1


Chief Engineer (O&M)
Khaperkheda TPS



**MAHARASHTRA STATE POWER GENERATION CO. LTD.
KHAPERKHEDA THERMAL POWER STATION**

(ISO 9001:2015, ISO 14001:2015, ISO 18001:2007 & ISO 50001:2011)
Office of: Chief Engineer, T.P.S., Khaperkheda, Dist. Nagpur, PIN - 441102
Phone: (07113) 268167 to 170, 266000 FAX: 268239(Off)/268123(Site)
Email - ce@genkpkd@mahagenco.in



**NOISE LEVEL MESUREMENT RECORD
MONTH DEC-2018**

Sr. No.	Location	Unit No. 5		Sr. No.	Location	Unit No. 5	
		Max	Min			Max	Min
1	PCR	55.8	54.4	12	Coal Feeder B	82.3	80.9
2	Turbine Floor	86.6	85.4	13	Coal Feeder E	86.3	84.4
3	Turbine Basement	83.1	81.6	14	Boiler Basement Area	82.7	81.6
4	6.6 K.V. Room	58.5	57.8		Coal Mill B	86.9	85.5
5	Boiler Feed Pump	87.6	85.2	15	Coal Mill E	86.3	84.4
6	Feed Pump Cabin	68.8	65.1	17	PA Fan	97.4	94.3
7	COP Cabin	67.7	66.6	18	FD Fan	96	95.4
8	Compressor Area	96.3	93.9	19	ID Fan	82.1	80.3
9	Compressor cabin	60.7	60.1	20	AHP Control Room	64.1	62.2
10	Firing Floor	81.9	79.2	21	AHP Compressor area	93.8	92.2
11	Firing Floor Cabin	70.9	69.4	22	AHP Pump	93	91.6

Sr. No.	Location	500 MW	
		Max	Min
1	GS Pump House	92.4	90.5
2	CW Pump House	87.1	86
3	DM Feed Water Pump	70.9	68.2
4	Oil Handling Plant	75.8	73.7
5	Crusher House	65.9	58.2
6	Apron Feeder	70.4	68.2
7	Conveyor Belt Area	82.9	79.5
8	Wagon Tippler Area	77.9	72.9
9	Unloading Bay	79.5	78.1
10	Bunker House	79.2	77.5
11	Workshop
12	AC plant	87.5	85.2
13	Coal Sampling Room	61.2	60.1



Chief Engineer (O&M)
Khaperkheda TPS



Annexure-7

लोकमत

शनिवार, दि. १ जुलै २००६ ११



महानिर्मिती खापरखेडा येथील वीज निर्मिती
प्रकल्पाच्या विस्तारास केंद्र शासनाच्या
पर्यावरण मंत्रालयाची मंजूरी

महाराष्ट्र राज्य विद्युत निर्मिती कंपनीतर्फे खापरखेडा येथे सुरू करावयाच्या कोळसा इंधनावर आधारित १ x ५०० मे.वॅ. क्षमतेचा वीज निर्मिती विस्तार प्रकल्प, कोणत्याही पर्यावरणदृष्ट्या संवेदनशील किंवा वन जमिनीत येत नसल्यामुळे त्याला केंद्र शासनाच्या पर्यावरण व वन मंत्रालयाने त्यांचे पत्र क्र. १३०११/२४/२००५- IA II(T) दि. ०२ जून २००६ अन्वये मंजूरी दिल्याचे कळविले आहे.

या मंजूरीच्या पत्राच्या प्रती राज्य प्रदूषण मंडळाच्या कार्यालये / कमेटी तसेच केंद्रीय पर्यावरण व वन मंत्रालयाचे संकेतस्थळ (वेबसाईट) <http://envfor.nic.in> येथे उपलब्ध आहेत.

15 July 2006

Attested
08/8/06
EXECUTIVE ENGINEER (Gen
CORPORATE ENVIRONMENT
HEALTH & SAFETY UNIT
MSEB.

100

100

100

100

100

8

नवभारत, नागपुर, 29 जून 06



महानिर्मिती

महाराष्ट्र राज्य विद्युत निर्मिती कंपनी मर्यादित

खापरखेडा स्थित विद्युत निर्मिती प्रकल्प के विस्तार को केन्द्र शासन के पर्यावरण मंत्रालय की स्वीकृति

महाराष्ट्र राज्य विद्युत निर्मिती कंपनी की ओर से खापरखेडा में प्रारंभ किये जाने वाले कोयला ईंधन पर आधारित 1×500 मे.वॉ. क्षमता का विद्युत निर्मिती विस्तार प्रकल्प किसी भी तरह से पर्यावरण की दृष्टि से संवेदनशील या वन भूमि में न आने के कारण उसे केन्द्र शासन के पर्यावरण एवं वन मंत्रालय ने उनके पत्र क्र. जे-13011/24/2005-1 ए.॥ (टी) दि. 02 जून 2006 अन्वये स्वीकृति देने बाबत सूचित किया है.

इस स्वीकृति पत्र की प्रतिलिपियां राज्य प्रदूषण मंडल के कार्यालय/ कमेटी तथा केन्द्रीय पर्यावरण एवं वन मंत्रालय के संकेत स्थल (वेबसाइट) :- <http://envfor.nic.in> पर उपलब्ध है.

29th June 2006.

Attested

[Signature]

08/08/06

EXECUTIVE ENGINEER (Genl.)
CORPORATE ENVIRONMENT
HEALTH & SAFETY UNIT
MSEB.

