

JPL/EMD/F-30/4x250MW/2020/379

25/11/2020

The Regional Director (S),  
Ministry of Environment and Forests,  
Regional office (WCZ)  
Ground Floor, East Wing  
New Secretariat Building  
Civil Line, Nagpur - 440001 (Maharashtra)

Sub.: -Submission of Half Yearly Environmental Clearance Compliance Reports of Stage-I (2x250MW) and Stage-II (2x250MW) of O.P. Jindal Super Thermal Power Plant at village Tamnar, Distt.- Raigarh (C.G.) for the period of April, 2020 to September, 2020.

Ref.: -1.Environmental Clearance No.J.13011/15/93-IA.II (T) dt. 24/09/1997 & Revalidated on 19/08/2004 of Stage -I (2 x 250 MW), J-13011/8/2006-IA.II (T) dt.08/06/2006 of Stage -II (2 x 250 MW).  
2. MoEF Office Memorandum No. J-11013/41/2006-IA.II (I) dt.06/04/2011.  
3. Amendment in Environmental Clearance issued vide letter No. J.13012/08/2006-IA.II (T) dt.03/01/2019.


Dear Sir,

This has reference to the above cited subject. Enclosed please find herewith Half Yearly Environmental Clearance Compliance Reports of Stage-I (2x250MW) and Stage-II (2x250MW) and compliance of additional conditions of O.P. Jindal Super Thermal Power Plant at village Tamnar, Distt.- Raigarh (C.G.) along with Environmental monitoring data for the period of **April, 2020 to September, 2020** in soft copy (through e-mail).

Trust that you will find the above information in order.

Thanking you,

Yours faithfully,  
For **JINDAL POWER LIMITED**

  
Shiv Kumar Singh  
General Manager -EMD  
Encl. : As above.

Cc:

The Director, Ministry of Environment, Forest and Climate Change Indira Paryavaran Bhavan Jorbagh Road, New Delhi - 110 003	The Zonal Officer, Central Pollution Control Board, 3 <sup>rd</sup> Floor, Sahkar Bhawan, North T.T.Nagar, Bhopal- 462 003 (M.P)
The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sec.19 Atal Nagar, Raipur (CG) -490099	

**Jindal Power Limited, Tamnar**

**Compliance Report of Environmental Clearance and additional conditions for Stage-I (2x250MW) of O.P.Jindal Super TPP ,Tamnar vide letters No.J.13011/15/93-IA.II (T) & J.11013/41/2006-IA.II (I) dated 24/09/1997 & 06/04/2011.**

2	Conditions	Compliance Status
(i)	All the conditions stipulated by Madhya Pradesh Pollution Control Board vide their letter No. 2077/TS/EZ/MPPCB/96 dated 07/02/1997 should be strictly implemented.	All the conditions stipulated by the Madhya Pradesh Pollution Control Board vide their letter No. 2077/TS/EZ/MPPCB/96 dated 07/02/1996 are strictly implemented.
(ii)	<b>(As amended vide MoEF letter No. J-13011/15/2003-IA. II (T) dt. 24/06/05) :</b> A bi-flue stack of 220 m height and internal diameter of 4.75 m with continuous monitoring system shall be installed for 2 x 250 MW units as Phase-1. For adequate dispersal of gaseous pollutants, exit velocity will be maintained at 25 m/sec by installing ID fans and continuous record of exit velocity shall also be maintained and submitted to the Ministry on a yearly basis.	A bi-flue stack of height 220 m and internal diameter of 4.75 m with continuous on-line monitoring system has been already installed. Exit velocity of 25 m/s is maintained. Records of exit velocity has been maintained and report for the period from April, 2020 to September, 2020 is enclosed as <b>Annexure-I</b> .
(iii)	Electrostatic Precipitator having efficiency of not less 99.8% should be installed. It should be ensured that particulate emission would not exceed the prescribed limit of 150 mg/Nm <sup>3</sup> .	Electrostatic Precipitators (ESP's) of efficiency >99.9% have been installed. The ESP's are designed to achieve particulate emission below 50 mg/Nm <sup>3</sup> .
(iv)	Closed Circuit Cooling Device should be provided and it should be ensured that only minimum water is drawn for makeup purposes. The requirement of water for the project will be met by constructing 18 mt high dam across Kurkut River involving a cost around Rs.48 crores. The forest area coming under submergence shall be identified and separate clearance under the Forest (Conservation) Act shall be obtained by the project authorities prior to commissioning the work on the project.	Induced Draft Cooling Tower with closed circuit has been installed and a COC > 5 is maintained to ensure that minimum water is drawn for make-up purpose. An 18 m high dam across Kurket river has been constructed and is in operation. Around 177.542 Ha. forest area had been identified under submergence area and a separate clearance from Chhattisgarh Govt. Forest Division has obtained vide letter No.F-7-19/03/10-2 , Raipur dated 10/10/2005 under the Forest (Conservation) Act .
(v)	Adequate space should be provided for installation of the gas desulphurisation plant in future for control of sulphur dioxide.	Adequate space has been provided for installation of gas desulphurisation plant in future for control of sulphur dioxide.
(vi)	Acquisition of land should be restricted to 614 ha with the following break up:- Power plant-360 ha Ash Dyke-198 ha ,Colony-56ha. No additional area will be acquired for Phase-II including requirement for fly ash disposal.	Complied.
(vii)	Noise level should be limited to 85 dBA and regular maintenance of equipments be undertaken. For people working in the area of generator halls & other high noise area, ear plugs should be provided.	The stipulated noise level is being maintained through installed acoustic hoods & enclosures and regular maintenance of equipments. Earplugs & Earmuffs have been provided to the employees working in the noise generating areas.
(viii)	For controlling fugitive dust, regular sprinkling of water in coal handling and other vulnerable areas of the plant should be ensured.	Water spraying is being carried out regularly in coal handling area and other vulnerable areas of the plant to control fugitive dust.

	Conditions	Compliance Status
(ix)	A greenbelt of 100 m width will be created all along the plant boundary. Greenbelt will also be created along the ash disposal area. A norm of 1500 -2000 trees per ha should be followed. A detailed proposal of green belt creation including aftercare, gap filling, monitoring etc. should be prepared along with financial requirements and submitted to the Ministry by 31 <sup>st</sup> December, 1997.	A detailed proposal for green belt development had been already submitted to the Ministry. Green belt of approximately 100 m width (depending upon space availability) along the plant boundary is in progress. Greenbelt has also been created along the ash disposal area. Saplings have been planted as per the CPCB guidelines. Plantation development status for the year 2020-21 (till sep-2020) is enclosed as <b>Annexure -II</b> .
(x)	Continuous monitoring of ground water should be undertaken in project impact area by establishing good network of observation wells in consultation with the Central Ground Water Board. Result & data collected should be analyzed to ascertain the status of water quality and findings should be submitted.	A network of observation wells and piezometers have been established in impact area in consultation with Central Ground Water Board and monitoring the ground water quality at regular intervals. Ground & surface water quality reports for the month of August 2020 is enclosed as <b>Annexure -III (a) &amp; III(b)</b> .
(xi)	All effluents generated in various plant activities should be collected in the Central Effluent Treatment Plant and treated to ensure adherence to specified standards of discharge.	Treated water from the Neutralization pit, Boiler blow down and Cooling tower blow down are taken to Central Monitoring Basin (Guard pond) after treatment it is reused in ash slurry preparation. 100% decanted ash water from ash dyke is recirculated and reused for ash slurry preparation. Treated effluent Monitoring Report for the period from April, 2020 to September, 2020 is enclosed as <b>Annexure- IV</b> .
(xii)	Provision shall be made for collection of fly ash in dry form. Close conveyor system with dust suppression mechanism shall be used for transport of coal from the mine and for carrying the ash to the disposal areas. Adequate provision should be made for sprinkling of water at strategic locations to ensure that fly ash does not get air borne.	Dry fly ash is collected through pneumatic conveying system in 2 No. ash silos of capacity 1600 Tonnes each. Coal is transported in environment friendly manners. Dry fly ash is transported by covered trucks by maintaining sufficient moisture for utilization in brick manufacturing, land filling, Mine backfilling, ash dyke raising etc. Wet ash is disposed to ash dyke through ash slurry pipelines. Water level is always maintained in the ash dyke in such a way that there is no fugitive dust emission from the ash dyke.
(xiii)	Ash pond area should be provided with impervious lining and suitable drainage provision should be made around the coal stock yard.	Ash pond area is provided with clay compacted impervious lining layer as per CPCB guidelines. Suitable drainage provision with sedimentation pit is made around the coal stockyard.
(xiv)	Fly ash generated will be fully utilized within 10 years starting with 20% utilization from the year of operation of the project with the additional utilization of 10% every year.	All out efforts are being made to utilize ash in accordance with the Fly ash utilization notification. The avenue include ash bricks, mine backfilling, road construction, ash dyke raising, low lying area filling etc.

	<b>Conditions</b>	<b>Compliance Status</b>
(xv)	Detailed survey of flora and fauna along Kurkut river/ submergence area shall be carried out in consultation with the institution like BSI, ZSI, WLI, Dehra Dun, local recognized Universities, Institutions etc. and the report should be submitted within six months.	Detailed survey of flora and fauna along Kurket river/ submergence area had been carried out by Prof.A.K.Girolkar, Principal & Professor (Botany), K.G. Science & Arts College, Raigarh, Chhattisgarh. The report has already been submitted to the Ministry.
(xvi)	Project affected people should be adequately compensated and rehabilitated as per the State Govt. norms in consultation with the State authorities. The final R&R Programme and package should be submitted within six months. The project colony should be located 6-8 kms away from the plant site to avoid direct impact of the project.	All land holders affected by the project have been compensated as per directives of State Govt. of C.G. and as such no R&R issue is pending. The colony is located at 6.5 km away from the plant site in upwind direction.
(xvii)	Adequate financial provision should be made for implementation of environmental mitigative measures with adequate scope for its enhancement, if required in future.	Complied as per EMP provided in the EIA Report.
(xiii)	Regular monitoring for SPM, SO <sub>2</sub> and NO <sub>x</sub> around the power plant may be carried out and records maintained. The data so collected should be properly analysed and submitted to the Ministry every six months.	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>x</sub> and CO are regularly monitored in and around the power plant and records are properly maintained. The collected data are regularly submitted to the Ministry in every six months. The data for the period of April, 2020 to September, 2020 are enclosed as <b>Annexure- V (a) to V (f)</b> .
(xix)	Full cooperation should be extended to the Scientists/ Officers from the Regional Office of the Ministry at Bhopal/ the CPCB/ the SPCB who would be monitoring the compliance of environmental status. Complete set of impact assessment report and the Management Plans should be forwarded to the Regional Office/ the CPCB/ the SPCB for their use during monitoring.	Noted.
(xx)	Monitoring Committee should be constituted for reviewing the compliance to various safeguard measures by involving recognized local NGOs, Pollution Control Boards, Institutions, Experts etc.	Request letter for formation of Monitoring Committee was already submitted to Chhattisgarh Environment Conservation Board, Regional Office vide letter No.JPL/EMD/RO/OCT-2010 dated 7/10/2010. However, we have engaged ISM, Dhanbad for monitoring of compliance to various safeguard measures.
3	The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	Noted.
4	In case of any deviation or alteration in the project from proposed those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(S) imposed and to add additional environmental protection measures required, if any.	Noted.

**Jindal Power Limited, Tamnar**

	<b>Conditions</b>	<b>Compliance Status</b>
5	The above stipulations shall be enforced among others as under the water (Prevention and Control of Pollution) Act, 1974 , the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act,1986, the Public Liability Insurance Act,1991 and rules there under, the Environment Impact Assessment notification of January ,1994 and its amendments.	Noted.
	<b>Additional Conditions (as per MoEF Memorandum No.J.11013/41/2006-IA.II (I) dated 06.04.2011)</b>	<b>Compliance Status</b>
(i)	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) is being carried out and continuous records are maintained. Results of monitoring are being submitted to the Regional Office of MoEF regularly. Results of monitoring are being regularly uploaded on website of JPL. The real time data of CEMS and CAAQMS are uploaded on CPCB & CECB servers.
(ii)	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/UTPCCs and the Regional Office of MoEF.	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environmental clearance conditions are being regularly uploaded on website. Monitored data are being regularly submitted to CECB-Raipur and the Regional Office of MoEF.
(iii)	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Ambient air quality data and the stack emission data is being displayed in public domain near the main gate of the company and updated in real time.

Compliance Report of Environmental Clearance and additional conditions for Stage-II (2x250MW) of O.P.Jindal Super TPP, Tamnar vide letters No.J-13011/8/2006-IA.II(T) & J-11013/41/2006-IA.II(I) dated 08/06/2006 & 06/04/2011

Sl. No	Conditions	Compliance Status
(i)	All the conditions stipulated by Chhattisgarh Environment Conservation Board vide their letter no. 984/TS/CECB/2006 dated 23/02/06 shall be strictly implemented.	All the conditions stipulated by the Chhattisgarh Environment Conservation Board vide their letter no. 984/TS/CECB/2006 dated 23/02/06 are strictly implemented.
(ii)	No additional land for ash pond shall be acquired during phase-II of the project. The height of the existing ash dyke shall be limited to 14 m.	The area earmarked for ash dyke is 198 Ha. for both Phase-I (2x250MW) & Phase-II (2x250MW). No additional land is acquired for ash dyke for Phase- II (2x250MW). Noted.
(iii)	A 500 m distance from State highway and HFL of river Kelo to the plant site, ash pond and Township must be kept.	Complied.
(iv)	A copy of the requisite clearances from state government for construction of Rabo dam on Kurket River shall be submitted within one month of the receipt of this letter.	Copy of the requisite clearances from State Government for construction of Rabo dam on Kurket river has been already submitted to MoEF, New Delhi vide Letter No .AB/1000 MW/MoEF/509/001, dated 16/06/2006.
(v)	Ash in the coal to be used as fuel shall not exceed 40%.	Noted
(vi)	Copy of coal linkage and stack height clearance shall be submitted within one month to the Ministry.	Copy of Coal Block allocation and Stack height clearance from the Airport Authority of India has been submitted to Ministry vide letter No.AB/1000MW/MoEF/509/001 dated 16/06/2006.
(vii)	A bi-flue stack of height 220 m and internal diameter of 4.75 m with continuous On-line monitoring system shall be installed. For adequate dispersal of gaseous pollutants, exit velocity shall be maintained at 25 m/sec by installing ID fans and continuous record of exit velocity shall also be maintained and submitted to the Ministry on a 6 monthly basis.	A bi-flue stack of height 220 m and internal diameter of 4.75 m with continuous on-line monitoring system has already been installed. ID fans are installed and exit velocity of 25 m/s is maintained. Report of exit velocity for the period of April, 2020 to September, 2020 is enclosed as <b>Annexure- I</b> .
(viii)	Electrostatic Precipitators (ESPs) with an efficiency of 99.9% efficiency shall be installed to limit particulate emission within 50 mg/Nm <sup>3</sup> Automatic system for shutting down the power plant in the event of non-functioning of ESPs shall be installed.	Electrostatic Precipitators (ESPs) with an efficiency of >99.9% have been installed. The ESP's are designed to achieve particulate emission below 50 mg/Nm <sup>3</sup> . Report of Particulate Matter for the period of April, 2020 to September, 2020 is enclosed as <b>Annexure-I</b> Particulate emissions below 50 mg/Nm <sup>3</sup> is being ensured.
(ix)	100% fly ash utilization shall be achieved within 9 years in accordance with the notification on fly ash utilization SO 763 (E) dated 14 <sup>th</sup> September, 1999 and the amendments made therein from time to time.	All out efforts are being made to utilize ash in accordance with the Fly ash utilization notification. The avenue include ash bricks, mine backfilling, road construction, ash dyke raising, low lying area filling etc.
(x)	COC of not less than 5 shall be adopted. No ground water shall be used for any purpose.	Cooling system with designed COC of 6 has been implemented. No ground water is used in plant for any purpose.

**Jindal Power Limited, Tamnar**

	<b>Conditions</b>	<b>Compliance Status</b>
<b>(xi)</b>	The treated effluents conforming to the prescribed standards shall be recirculated and reused within the plant. There shall be no waste water discharge into the surface water bodies, outside the plant boundary.	Treated effluents conforming to prescribed standards are re-circulated and re-used within the plant. Treated Effluent Monitoring Report for the period from April, 2020 to September, 2020 is enclosed as <b>Annexure-IV</b> . Effluents are treated in Central Monitoring Basin (Guard pond) and is re-used in ash slurry preparation. No wastewater is discharged into the surface water bodies, outside the plant boundary.
<b>(xii)</b>	Rain water harvesting shall be adopted and 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. A copy of the same shall be submitted within three months to the Ministry	Water reservoir of 35 million cu.m capacity at the Rabo dam and 12 lakh cu.m capacity at plant site have been constructed. Rainwater harvesting technique has adopted in the residential colony and other office complexes at the site, as per proposal prepared in consultation with Mr. V.K. Jain, formerly Engineer-In-Chief, Public Health Engineering Department and Chairman, M.P. Pollution Control Board, Bhopal and as per the guidelines of Central Ground Water Authority/ State Ground Water Board. The report had been submitted to the Ministry vide letter No.JPL/RTPP/RKS/2.5/1897
<b>(xiii)</b>	Continuous monitoring of ground water shall be undertaken in and around project impact area including ash pond area by establishing a network of observation wells in consultation with the Central Ground Water Board/ State Ground Water Board, as the ash pond lies in the catchment of river Pajhar. Data collected shall be analyzed to ascertain the status of water quality and results furnished to the Regional Office of this Ministry.	A network of observation wells and piezometers have been established in and around impact area including ash pond in consultation with Central Ground Water Board and monitoring the ground water quality at regular intervals. Results are submitted regularly to Ministry & its Regional Office, CPCB zonal office and CECB-Raipur. Ground & surface water quality reports for the month of April, 2020 & September, 2020 are enclosed as <b>Annexure -III (a) &amp; III (b)</b> .
<b>(xiv)</b>	Green belt of 100 m width shall be developed all around the power plant and ash pond area. One third (1/3) of the total plant area (phase-I&II) should be used for green belt development. <b>(As amended vide MoEF letter No. J-13011/8/2006-IA. II (T) dt. 25/04/07)</b> A green belt of 100 m width shall be developed all around the power plant covering approximately 1/3rd of power plant area. Greenbelt with an average width of 45 m shall also be developed around the ash dyke covering about 24 ha	Green belt of approximately 100 m width (depending upon space availability) along the plant boundary is being continuously developed/ strenghtened. 45 m wide green belt around the ash pond is developed. Plantation status for the year 2020-21 (till Sep-2020) is enclosed as <b>Annexure - II</b> .
<b>(xv)</b>	The project proponent shall take all precautionary measures during construction and operation of power plant for conservation and protection of endangered faunal species i.e. Sloth Bear ( <i>Melursus ursinus</i> ), Common Jungle Cat ( <i>Felis chaus</i> ), Indian Python ( <i>Python molurus</i> ), Rat Snake ( <i>Ptyus mucosus</i> ), Indian Cobra ( <i>Naja naja</i> ), Lizard ( <i>Varanus monitor</i> ) etc, reported in the study area, in consultation with the state Wildlife Dept. Action plan for conservation of endangered fauna shall be prepared and submitted to the Ministry & its Regional Office within 3 months.	A proposal for conservation of endangered wild life fauna species was prepared in consultation with State Wild Life Department, Raipur as per the guidelines of Wild Life Protection Act, 1972 and the same was submitted to the Ministry vide letter No.JPL/RTPP/RKS/2.5/1897 dated 19/09/2006.
<b>(xvi)</b>	First aid and sanitation arrangements shall be made for the drivers and other contract workers during the construction phase.	Complied.

	Conditions	Compliance Status
(xvii)	Leq of Noise level shall be limited to 75 dBA and regular maintenance of equipment be undertaken. For people working in the high noise areas, personal protection devices should be provided.	Noise level is being maintained within the prescribed limit. Earplugs & Earmuffs have been providing to the employees working in the noise generating areas.
(xiii)	Regular monitoring of the ambient air quality shall be carried out in and around the power plant and records maintained. Periodic six monthly reports should be submitted to the Regional Office of this Ministry.	Ambient air quality is being monitored in and around the power plant and records are being maintained. The reports are being submitted to the Regional Office of Ministry regularly in every six months. The reports for the period from April, 2020 to September, 2020 are enclosed as <b>Annexure- V (a) to V (f)</b> .
(xix)	For controlling fugitive dust, regular sprinkling of water in coal storage area and other vulnerable areas of the plant shall be ensured.	Water spraying is a regular practice in coal handling area and other vulnerable areas of the plant to control fugitive dust.
(xx)	The project proponent should 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 clearances letters are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	The information regarding advertisement in two local newspapers informing the project has been accorded environmental clearance has been sent to MoEF, New Delhi vide Letter No. AG/1000MW/MoEF/509/002, dt. 24/06/2006.
(xxi)	A separate environment monitoring cell with suitable qualified staff should be set up for implementation of the stipulated environmental safeguards.	Environment Management Department is already in place with qualified and experienced staff for implementation of the stipulated environmental safeguards.
(xxii)	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards should be submitted to this Ministry/ Regional Office/ CPCB/ SPCB.	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards is being submitted to Ministry, Regional Office of Ministry, CPCB and SPCB.
(xxiii)	Regional Office of the Ministry of Environment & Forests located at Bhopal will monitor the implementation of the stipulated conditions. Complete set of Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.	Noted.
(xxiv)	Separate funds should be allocated for implementation of environmental protection measures along with item-wise break-up. 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 year-wise expenditure should be reported to the Ministry.	Separate funds for implementation of environmental protection measures have been allocated as part of the project cost. Year wise (April to March) expenditure details are being submitted regularly to the Ministry.



**Jindal Power Limited, Tamnar**

	<b>Conditions</b>	<b>Compliance Status</b>
<b>(xxv)</b>	Full cooperation should be extended to the Scientists/ Officers from the Ministry/ Regional Office of the Ministry at Bhopal/ the CPCB/ the SPCB who would be monitoring the compliance of environmental status.	Noted.
<b>4</b>	The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	Noted.
<b>5</b>	The environmental clearance accorded shall be valid for a period of 5 years for starting construction/Operation of the power plant. In case, the project authorities fall to do so within this stipulated period, the environmental clearance shall stand lapsed automatically.	Plant has been constructed/operating within the stipulated period. The Unit-1,2,3 & 4 were commissioned on 08/12/2007, 15/06/2008, 06/04/2008 & 05/09/2008 respectively.
<b>6</b>	In case of any deviation or alteration in the project from proposed those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(S) imposed and to incorporate additional environmental protection measures required, if any.	Noted.
<b>7</b>	The above stipulations shall be enforced along with others as under the water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act,1986 and rules there under, The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, Hazardous Wastes (Management and Handling) Rules,1989, the Public Liability Insurance Act,1991 and rules there under, the Environment Impact Assessment notification of January,1994 and their subsequent amendments.	Noted.
	<b>Additional Conditions (as per MoEF Office Memorandum No.J.11013/41/2006-IA.II (I) dated 06/04/2011)</b>	<b>Compliance Status</b>
<b>(i)</b>	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) is being carried out and continuous records are maintained. Results of monitoring are being submitted to the Regional Office of MoEF regularly. Results of monitoring are being regularly uploaded on website of JPL. The real time data of CEMS and CAAQMS are uploaded on CPCB & CECB servers.

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	<b>Additional Conditions</b>	<b>Compliance Status</b>
(ii)	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board/UTPCCs and the Regional Office of MoEF.	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environmental clearance conditions are being regularly uploaded on company website. Monitored data are being regularly submitted to CECB-Raipur and the Regional Office of MoEF.
(iii)	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Ambient air quality data and the stack emission data is being displayed in public domain near the main gate of the company and updated in real time.
	<b>Additional Conditions (as per MoEF Office Memorandum No.J.11013/41/2006- IA.II (I) dated 03/01/2019)</b>	<b>Compliance Status</b>
(i)	Groundwater analysis is to be carried out at the upstream / downstream of the existing fly ash pond by creating a network with the existing wells and installing new piezometers and report be submitted that no leaching is taking place due to fly ash duming.	A network of observation wells and piezometers have been established in and around impact area including ash pond and monitoring the ground water quality at regular intervals. Results are submitted regularly to Ministry & its Regional Office, CPCB zonal office and CECB-Raipur. Ground & surface water quality reports for the month of August 2020 are enclosed as <b>Annexure -III (a) &amp; III (b)</b> .
(ii)	Alternate technology for fly ash utilization such as road making using geopolymers shall be explored with the institutes of national repute.	Noted.
(iii)	The approved ash pond site at village Dolesara/ Roadapalli in an area of 239 ha vide ministry's letter dated 26.4.2017 for disposal of ash generated from 4X600 MW Power Plant shall be operationalized within one year so that there should not be any necessity to further raise the existing dyke height.	Application for amendment in CTE for dyke has been made to CECB and the same is awaited.  On receiving amendment in CTE, construction of dyke will commence.

## STACK MONITORING REPORT (4X250 MW TPP) OF APRIL , 2020 TO SEPTEMBER 2020

Annexure-I

Month	Name of the Unit	Stack height (Mtr.)	Stack diameter (Mtr.)	Exit Velocity (m/sec)	Concentration of PM (mg/Nm <sup>3</sup> )
Apr-20	Unit-1	220	4.75	Unit Under Shut Down	Unit Under Shut Down
	Unit-2			Unit Under Shut Down	Unit Under Shut Down
	Unit-3			Unit Under Shut Down	Unit Under Shut Down
	Unit-4			25.3	40.2
May-20	Unit-1	220	4.75	Unit Under Shut Down	Unit Under Shut Down
	Unit-2			Unit Under Shut Down	Unit Under Shut Down
	Unit-3			Unit Under Shut Down	Unit Under Shut Down
	Unit-4			25	38.5
Jun-20	Unit-1	220	4.75	25.1	40.3
	Unit-2			Unit Under Shut Down	Unit Under Shut Down
	Unit-3			Unit Under Shut Down	Unit Under Shut Down
	Unit-4			25	34.8
Jul-20	Unit-1	220	4.75	25	36.4
	Unit-2			24.9	41.3
	Unit-3			Unit Under Shut Down	Unit Under Shut Down
	Unit-4			25	38.4
Aug-20	Unit-1	220	4.75	Unit Under Shut Down	Unit Under Shut Down
	Unit-2			25	38.2
	Unit-3			25.1	42.4
	Unit-4			Unit Under Shut Down	Unit Under Shut Down
Sep-20	Unit-1	220	4.75	Unit Under Shut Down	Unit Under Shut Down
	Unit-2			25.1	43.3
	Unit-3			25	40.4
	Unit-4			24.9	44.6

## GREEN BELT DEVELOPMENT

20-21 ( Till September 2020)		
Location	No. of Saplings planted	Name of the main species
Within the plant (Industrial canteen, Kelo vihar, near Gate No.2), Colony, Rabo dam area, Road side and in nearby villages	13100	Alostonia, Gulmohar, Chakundi, Neem, Mango, Teak, Peltophorm, Jamun, Amla etc.

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<b>Name &amp; Address Of The Customer</b> <b>To,</b> <b>Jindal Power Limited</b> <b>P.O. Tamnar,</b> <b>District: Raigarh</b> <b>496107 (C.G.)</b>	Report No	UES/TR/20-21/0320		
	Lab Ref No	UES/20-21/W/0347-0348		
	Date of Sampling	26/08/2020		
	Date of Receipt	27/08/2020		
	Date of Report	31/08/2020		
	Date of analysis	Start:27/08/2020	End:31/08/2020	

**SAMPLE DETAILS**

Customer Sample Id / Sampling Location	1. Piezometer - 01 (Near Gate No. 03)	Latitude	22.13197
	2. Piezometer - 02 (SW near Ash Dyke S.V.2)	Longitude	83.45947
Customer Ref. No. & Date	4400013828, Date: 22/07/2020	Latitude	22.11586
Sample Type	GroundWater	Longitude	83.45075
Packing Of Sample	Plastic Bottle (5.0 ltr.), Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	OK		

REPORT NO.0320

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
<b>A. Organoleptic &amp; Physical Parameters</b>							
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.4°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.32	7.48
4	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025:(Part-10)	1	5	0.89	0.68
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	176	52.9
<b>B. General Parameters Concerning Substances undesirable in excessive amounts</b>							
1	Aluminium (as Al)	mg/L	IS 3025(part-55)	0.03	0.2	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS 3025(part-34)	0.5	No Relaxation	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.
4	Barium (as Ba)	mg/L	Annex F of IS:13428	0.7	No Relaxation	N.D.	N.D.
5	Boron (as B)	mg/L	IS 3025:(Part-57)	0.5	1.0	N.D.	N.D.
6	Calcium (as Ca)	mg/L	IS 3025:(Part-40)	75	200	28.0	8.0
7	Chloramines (as Cl <sub>2</sub> )	mg/L	IS 3025:(Part-26)	4.0	No Relaxation	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025:(Part-32)	250	1000	24.9	18.9
9	Copper (as Cu)	mg/L	IS 3025(part-42)	0.05	1.5	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025(part-60)	1	1.5	0.73	0.39
11	Free Residual Chlorine	mg/L	IS 3025:(Part-26)	0.2	1	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025(part-53)	0.3	No Relaxation	0.04	0.06

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REPORT NO.0320

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
14	Manganese (as Mn)	mg/L	IS 3025 (part-59)	0.1	0.3	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.
16	Nitrate (as NO <sub>3</sub> )	mg/L	IS 3025 (part-34)	45	No Relaxation	3.6	2.8
17	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (part-43)	0.001	0.002	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025 (part-56)	0.01	No Relaxation	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.
20	Sulphate (as SO <sub>4</sub> )	mg/L	IS 3025: (Part-24)	200	400	44.8	6.3
21	Sulphide (as H <sub>2</sub> S)	mg/L	IS 3025: (Part-29)	0.05	No Relaxation	N.D.	N.D.
22	Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-23)	200	600	40.0	24.4
23	Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-21)	200	600	66.0	4.0
24	Zinc (as Zn)	mg/L	IS 3025 (part-49)	5	15	N.D.	N.D.
<b>C. Parameters concerning toxic substances:-</b>							
1	Cadmium (as Cd)	mg/L	IS 3025 (part-41)	0.003	No Relaxation	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025 (part-27)	0.05	No Relaxation	N.D.	N.D.
3	Lead (as Pb)	mg/L	IS 3025 (part-47)	0.01	No Relaxation	N.D.	N.D.
4	Mercury (as Hg)	mg/L	IS 3025 (part-48)	0.001	No Relaxation	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025 (part-2)	0.07	No Relaxation	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025 (part-54)	0.02	No Relaxation	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025 (part-37)	0.01	0.05	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.
11	<b>Trihalomethanes:</b>						
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
b)	Dibromochloro methane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.

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REPORT NO.0320

### TEST REPORT


SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Piezometer 01	Piezometer 02
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.
<b>D. Pesticides:-</b>							
1	Alpha HCH	µg/l	USEPA 508		0.01	N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508		0.04	N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508		0.04	N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507		20	N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508		0.03	N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2, 8141 A		2	N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2, 8141 A		125	N.D.	N.D.
8	Chlorpyrifos	µg/l	USEPA 525.2, 8141 A		30	N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508		1	N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508		2	N.D.	N.D.
11	2,4-Dichlorophenoxy acetic Acid	µg/l	USEPA 515.1		30	N.D.	N.D.
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508		0.4	N.D.	N.D.
13	Ethion	µg/l	USEPA 1657 A		3	N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532		9	N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A		190	N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A		0.3	N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A		1	N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A		2	N.D.	N.D.
<b>E. Microbial Parameters</b>							
1	Total Coliform	MPN/100ml	IS:1622:1981:RA:2014		-	Absent	Absent
2	E. Coli	MPN/100ml	IS:1622:1981:RA:2014		-	Absent	Absent

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

REMARKS: RESULTS ARE AS ABOVE

**Terms & conditions**

- > The use of the report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for only test(s) only.

<p><i>Shankar</i> 31/08/2020 PREPARED BY</p>		<p>For ULTIMATE ENVIROLYTICAL SOLUTIONS <i>Shankar</i> 31/08/2020 AUTHORIZED SIGNATORY</p>
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-----End of the test report-----

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Name & Address Of The Customer

To,  
**Jindal Power Limited**  
**P.O. Tamnar,**  
**District: Raigarh**  
**496107 (C.G.)**

Report No	UES/TR/20-21/0321	
Lab Ref No	UES/20-21/W/0349-0351	
Date of Sampling	26/08/2020	
Date of Receipt	27/08/2020	
Date of Report	31/08/2020	
Date of analysis	Start:27/08/2020	End:31/08/2020

**SAMPLE DETAILS**

Customer Sample Id /Sampling Location	1. Piezometer - 06 (NW Near ash Dyke Reagan Village Side)	Latitude	22.11468
	2. Piezometer - 07 (NE Near ash Dyke village pata village)	Longitude	83.46731
		Latitude	22.13273
3. Piezometer - 08 (SE Near ash Dyke in front of SBI bank)	Longitude	83.45694	
	Latitude	22.11468	
Customer Ref. No. & Date	4400013828, Date: 22/07/2020		
Sample Type	Ground Water		
Packing Of Sample	Plastic Bottle (5.0 ltr.) Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	Ok		

REPORT NO.0321

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Piezometer 06	Piezometer 07	Piezometer 08
<b>A. Organoleptic &amp; Physical Parameters</b>								
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1	<1	<1
2	Odour	-	IS:3025:(part-5)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.26	7.18	7.38
4	Taste	-	IS:3025:(part-8)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS:3025:(Part-10)	1	5	0.68	0.86	0.94
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	89.0	129.6	52.8
<b>B. General Parameters Concerning Substances undesirable in excessive amounts</b>								
1	Aluminium (as Al)	mg/L	IS:3025:(part-55)	0.03	0.2	N.D.	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS:3025:(part-34)	0.5	No Relaxation	N.D.	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.	N.D.



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REPORT NO.0321

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Piezometer 06	Piezometer 07	Piezometer 08
5	Boron (as B)	mg/L	IS 3025: (Part-57)	0.5	1.0	N.D.	N.D.	N.D.
6	Calcium (as Ca)	mg/L	IS 3025: (Part-40)	75	200	20.8	18.4	8.8
7	Chloramines (as Cl <sub>2</sub> )	mg/L	IS 3025: (Part-26)	4.0	No Relaxation	N.D.	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025: (Part-32)	250	1000	2.9	6.9	9.9
9	Copper (as Cu)	mg/L	IS 3025 (part-42)	0.05	1.5	N.D.	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025 (part-60)	1	1.5	0.5	0.52	0.45
11	Free Residual Chlorine	mg/L	IS 3025: (Part-26)	0.2	1	N.D.	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025 (part-53)	0.3	No Relaxation	0.04	0.02	0.08
13	Magnesium (as Mg)	mg/L	IS 3025: (Part-46)	30	100	4.6	0.9	29.2
14	Manganese (as Mn)	mg/L	IS 3025 (part-59)	0.1	0.3	N.D.	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.	N.D.
16	Nitrate (as NO <sub>3</sub> )	mg/L	IS 3025 (part-34)	45	No Relaxation	2.2	2.6	2.0
17	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (part-43)	0.001	0.002	N.D.	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025 (part-56)	0.01	No Relaxation	N.D.	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.	N.D.
20	Sulphate (as SO <sub>4</sub> )	mg/L	IS 3025: (Part-24)	200	400	8.3	5.3	6.4
21	Sulphide (as H <sub>2</sub> S)	mg/L	IS 3025: (Part-29)	0.05	No Relaxation	N.D.	N.D.	N.D.
22	Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-23)	200	600	66.0	100.0	24.0
23	Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-21)	200	600	40.0	50.0	44.0
24	Zinc (as Zn)	mg/L	IS 3025 (part-49)	5	15	N.D.	N.D.	N.D.
<b>C. Parameters concerning toxic substances:-</b>								
1	Cadmium (as Cd)	mg/L	IS 3025 (part-41)	0.003	No Relaxation	N.D.	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025 (part-27)	0.05	No Relaxation	N.D.	N.D.	N.D.
3	Lead (as Pb)	mg/L	IS 3025 (part-47)	0.01	No Relaxation	N.D.	N.D.	N.D.

REPORT NO.0321

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Piezometer 06	Piezometer 07	Piezometer 08
5	Molybdenum (as Mo)	mg/L	IS 3025(part-2)	0.07	No Relaxation	N.D.	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025(part-54)	0.02	No Relaxation	N.D.	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025(part-37)	0.01	0.05	N.D.	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.	N.D.
11	Trihalomethanes:							
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.	N.D.
D.	Pesticides:-							
1	Alpha HCH	µg/l	USEPA 508	0.01		N.D.	N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508	0.04		N.D.	N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507	20		N.D.	N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508	0.03		N.D.	N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2, 8141 A	2		N.D.	N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2, 8141 A	125		N.D.	N.D.	N.D.
8	Chlorpyrifos	µg/l	USEPA 525.2, 8141 A	30		N.D.	N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508	1		N.D.	N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508	2		N.D.	N.D.	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1	30		N.D.	N.D.	N.D.

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REPORT NO.0321

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Piezometer 06	Piezometer 07	Piezometer 08
13	Ethion	µg/l	USEPA 1657 A		3	N.D.	N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532		9	N.D.	N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A		190	N.D.	N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A		0.3	N.D.	N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A		1	N.D.	N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A		2	N.D.	N.D.	N.D.
<b>E. Microbial Parameters</b>								
1	Total Coliform	MPN/100ml	IS:1622:1981:RA:2014		-	Absent	Absent	Absent
2	E. Coli	MPN/100ml	IS:1622:1981:RA:2014		-	Absent	Absent	Absent

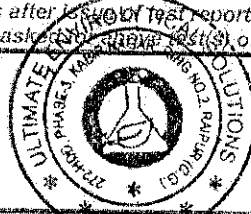
Note: mg/lit.: milligram per liter, N.D.: Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- The use of the report for publication, arbitration or as legal dispute is forbidden.
- Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- This is for information as the party has asked for only.

*Shukero*  
31/08/2020  
PREPARED BY



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Shukero*  
31/08/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----

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<i>Name &amp; Address Of The Customer</i>		Report No	UES/TR/20-21/0322	
<b>To,</b>		Lab Ref No	UES/20-21/W/0352-0354	
<b>Jindal Power Limited</b>		Date of Sampling	26/08/2020	
<b>P.O. Tamnar,</b>		Date of Receipt	27/08/2020	
<b>District: Raigarh</b>		Date of Report	31/08/2020	
<b>496107 (C.G.)</b>		Date of analysis	Start:27/08/2020	END:31/08/2020
SAMPLE DETAILS				
Customer Sample Id /Sampling Location	1. Pata Village	Latitude	22.13781	
		Longitude	83.46132	
	2. Kunjemura Village	Latitude	22.13519	
		Longitude	83.46135	
	3. Tamnar Village	Latitude	22.07879	
		Longitude	83.42356	
Customer Ref. No. & Date	4400013828, Date: 22/07/2020			
Sample Type	Ground Water			
Packing Of Sample	Plastic Bottle (5.0 ltr.) Glass Bottle (1.0 ltr.)			
Sample Collected By	Laboratory Chemist			
Sample Condition At Receipt	Ok			

REPORT NO. 0322

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tamnar Village
<b>A. Organoleptic &amp; Physical Parameters</b>								
1	Colour	Hazen	IS:3025:(Part-4)	5	15	<1	<1	<1
2	Odour	-	IS 3025(part-5)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.27	7.54	7.74
4	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025:(Part-10)	1	5	0.74	0.86	0.68
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	866.1	257.7	50.3
<b>B. General Parameters Concerning Substances undesirable in excessive amounts</b>								
1	Aluminium (as AL)	mg/L	IS 3025(part-55)	0.03	0.2	N.D.	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS 3025(part-34)	0.5	No Relaxation	N.D.	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.	N.D.
			Annex F of	-	No			

Recognized by Ministry of Environment Forest and Climate Change under EP act 1986

REPORT NO. 0322

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tannar Village
5	Boron (as B)	mg/L	IS 3025: (Part-57)	0.5	1.0	N.D.	N.D.	N.D.
6	Calcium (as Ca)	mg/L	IS 3025: (Part-40)	75	200	144.2	26.4	8.8
7	Chloramines (as Cl <sub>2</sub> )	mg/L	IS 3025: (Part-26)	4.0	No Relaxation	N.D.	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025: (Part-32)	250	1000	197.9	26.9	10.9
9	Copper (as Cu)	mg/L	IS 3025 (part-42)	0.05	1.5	N.D.	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025 (part-60)	1	1.5	0.14	0.61	0.48
11	Free Residual Chlorine	mg/L	IS 3025: (Part-26)	0.2	1	N.D.	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025 (part-53)	0.3	No Relaxation	0.18	0.08	0.16
13	Magnesium (as Mg)	mg/L	IS 3025: (Part-46)	30	100	27.2	7.2	35.7
14	Manganese (as Mn)	mg/L	IS 3025 (part-59)	0.1	0.3	N.D.	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.	N.D.
16	Nitrate (as NO <sub>3</sub> )	mg/L	IS 3025 (part-34)	45	No Relaxation	1.4	2.0	1.4
17	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (part-43)	0.001	0.002	N.D.	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025 (part-56)	0.01	No Relaxation	N.D.	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.	N.D.
20	Sulphate (as SO <sub>4</sub> )	mg/L	IS 3025: (Part-24)	200	400	22.8	4.8	5.5
21	Sulphide (as H <sub>2</sub> S)	mg/L	IS 3025: (Part-29)	0.05	No Relaxation	N.D.	N.D.	N.D.
22	Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-23)	200	600	132.0	166.0	26.0
23	Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-21)	200	600	472.0	96.0	27.0
24	Zinc (as Zn)	mg/L	IS 3025 (part-49)	5	15	N.D.	N.D.	N.D.
<b>C. Parameters concerning toxic substances:-</b>								
1	Cadmium (as Cd)	mg/L	IS 3025 (part-41)	0.003	No Relaxation	N.D.	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025 (part-27)	0.05	No Relaxation	N.D.	N.D.	N.D.
3	Lead (as Pb)	mg/L	IS 3025 (part-49)	0.01	No	N.D.	N.D.	N.D.

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REPORT NO. 0322

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tamnar Village
4	Mercury (as Hg)	mg/L	IS 3025 (part-48)	0.001	No Relaxation	N.D.	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025 (part-2)	0.07	No Relaxation	N.D.	N.D.	N.D.
6	Nickel (as Ni)	mg/L	IS 3025 (part-54)	0.02	No Relaxation	N.D.	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025 (part-37)	0.01	0.05	N.D.	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.	N.D.
11	Trihalomethanes:							
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.	N.D.
D.	Pesticides:-							
1	Alpha HCH	µg/l	USEPA 508		0.01	N.D.	N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508		0.04	N.D.	N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508		0.04	N.D.	N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507		20	N.D.	N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508		0.03	N.D.	N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2, 8141 A		2	N.D.	N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2, 8141 A		125	N.D.	N.D.	N.D.
8	Chlorpyrifos	µg/l	USEPA 525.2, 8141 A		30	N.D.	N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508		1	N.D.	N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508		2	N.D.	N.D.	N.D.
11	2,4-Dichlorophenox	µg/l	USEPA 515.1		30	N.D.	N.D.	N.D.

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REPORT NO. 0322

### TEST REPORT


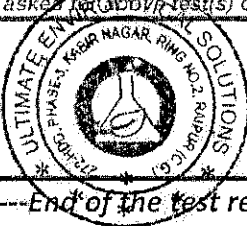
SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT		
				Acceptable Limit	Permissible limit	Pata Village	Kunjemura Village	Tannar Village
12	Endosulphan (alpha, beta and sulphate)	µg/l	USEPA 508		0.4	N.D.	N.D.	N.D.
13	Ethion	µg/l	USEPA 1657 A		3	N.D.	N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532		9	N.D.	N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A		190	N.D.	N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A		0.3	N.D.	N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A		1	N.D.	N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A		2	N.D.	N.D.	N.D.
<b>E. Microbial Parameters</b>								
1	Total Coliform	MPN/100ml	IS:1622:1981:RA :2014		-	Absent	Absent	Absent
2	E. Coli	MPN/100ml	IS:1622:1981:RA :2014		-	Absent	Absent	Absent

Note: mg/lit.: milligram per liter, N.D.: Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The above analysis report refers to the particular sample received at our end and the use of the report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for (Q667) test(s) only.

 PREPARED BY 31/08/2020		For ULTIMATE ENVIROLYTICAL SOLUTIONS  AUTHORIZED SIGNATORY 31/08/2020
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-----End of the test report-----



**Ultimate**  
ENVIROLYTICAL SOLUTIONS

HDD-272, Phase III - Near JP Chowk  
Ring Road No.-2, Kabir Nagar, Raipur (C.G.) - 492099  
Ph : 0771 - 4027777 | Email : ultimatenviro@gmail.com

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<b>Name &amp; Address Of The Customer:</b>  <b>To,</b> <b>Jindal Power Limited</b> <b>P.O. Tamnar,</b> <b>District: Raigarh</b> <b>496107 (C.G.)</b>	Report No	UES/TR/20-21/0323	
	Lab Ref No	UES/20-21/W/0355-0356	
	Date of Sampling	26/08/2020	
	Date of Receipt	27/08/2020	
	Date of Report	31/08/2020	
	Date of analysis	Start:27/08/2020	End: 31/08/2020

**SAMPLE DETAILS**

Customer Sample Id /Sampling Location	1. Kelo River Upstream	Latitude	22.69700
	2. Kelo River Downstream	Longitude	83.42118
Customer Ref. No. & Date	4400013828, Date: 22/07/2020		
Sample Type	Surface Water		
Packing Of Sample	Plastic Bottle (5.0 ltr.) Glass Bottle (1.0 ltr.)		
Sample Collected By	Laboratory Chemist		
Sample Condition At Receipt	Ok		

REPORT NO.0323

**TEST REPORT**

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Downstream
A.	<b>Organoleptic &amp; Physical Parameters</b>						
1	Colour	Haze n	IS:3025:(Part-4)	5	15	5.8	10.5
2	Odour	-	IS:3025:(part-5)	Agreeable	Agreeable	Agreeable	Agreeable
3	pH Value at 25.2°C	-	IS:3025:(Part-11)	6.5-8.5	No Relaxation	7.87	7.30
4	Taste	-	IS 3025(part-8)	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025:(Part-10)	1	5	68.4	51.93
6	Total Dissolved Solids	mg/L	IS:3025:(Part-16)	500	2000	20.3	114.3
B.	<b>General Parameters Concerning Substances undesirable in excessive amounts</b>						
1	Aluminium (as Al)	mg/L	IS 3025(part-55)	0.03	0.2	N.D.	N.D.
2	Ammonia (as total ammonia-N)	mg/L	IS 3025(part-34)	0.5	No Relaxation	N.D.	N.D.
3	Anionic Detergent (as MBAS)	mg/L	Annex K of IS:13428	0.2	1.0	N.D.	N.D.
4	Barium (as Ba)	mg/L	Annex F of IS:13428	0.7	No Relaxation	N.D.	N.D.
5	Boron (as B)	mg/L	IS 3025:(Part-57)	0.5	1.0	N.D.	N.D.
6	Calcium (as	mg/L	IS 3025:(Part-40)	75	200	5.6	17.6



REPORT NO.0323

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Down stream
7	Chloramines (as Cl <sub>2</sub> )	mg/L	IS 3025: (Part-26)	4.0	No Relaxation	N.D.	N.D.
8	Chloride (as Cl)	mg/L	IS 3025: (Part-32)	250	1000	9.9	7.9
9	Copper (as Cu)	mg/L	IS 3025(part-42)	0.05	1.5	N.D.	N.D.
10	Fluoride (as F)	mg/L	IS 3025(part-60)	1	1.5	0.18	0.69
11	Free Residual Chlorine	mg/L	IS 3025: (Part-26)	0.2	1	N.D.	N.D.
12	Iron (as Fe)	mg/L	IS 3025(part-53)	0.3	No Relaxation	0.28	0.12
13	Magnesium (as Mg)	mg/L	IS 3025: (Part-46)	30	100	5.3	7.8
14	Manganese (as Mn)	mg/L	IS 3025(part-59)	0.1	0.3	N.D.	N.D.
15	Mineral Oil	mg/L	Clause 6 of IS 3025 (Part-39) Infrared partition method	0.5	No Relaxation	N.D.	N.D.
16	Nitrate (as NO <sub>3</sub> )	mg/L	IS 3025(part-34)	45	No Relaxation	8.73	1.22
17	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025(part-43)	0.001	0.002	N.D.	N.D.
18	Selenium (as Se)	mg/L	IS 3025(part-56)	0.01	No Relaxation	N.D.	N.D.
19	Silver (as Ag)	mg/L	Annex J of IS 13428	0.1	No Relaxation	N.D.	N.D.
20	Sulphate (as SO <sub>4</sub> )	mg/L	IS 3025: (Part-24)	200	400	18.8	28.6
21	Sulphide (as H <sub>2</sub> S)	mg/L	IS 3025: (Part-29)	0.05	No Relaxation	N.D.	N.D.
22	Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-23)	200	600	20.0	42.0
23	Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025: (Part-21)	200	600	36.0	44.0
24	Zinc (as Zn)	mg/L	IS 3025(part-49)	5	15	N.D.	N.D.
<b>C. Parameters concerning toxic substances:-</b>							
1	Cadmium (as Cd)	mg/L	IS 3025(part-41)	0.003	No Relaxation	N.D.	N.D.
2	Cyanide (as CN)	mg/L	IS 3025(part-27)	0.05	No Relaxation	N.D.	N.D.
3	Lead (as Pb)	mg/L	IS 3025(part-47)	0.01	No Relaxation	N.D.	N.D.
4	Mercury (as Hg)	mg/L	IS 3025(part-48)	0.001	No Relaxation	N.D.	N.D.
5	Molybdenum (as Mo)	mg/L	IS 3025(part-21)	0.05	No Relaxation	N.D.	N.D.

REPORT NO.0323

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS 10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Down stream
6	Nickel (as Ni)	mg/L	IS 3025(part-54)	0.02	No Relaxation	N.D.	N.D.
7	Polychlorinated biphenyls	mg/L	ASTM 5175	0.0005	No Relaxation	N.D.	N.D.
8	Polynuclear aromatic hydrocarbons (as PAH)	mg/L	APHA 6440	0.0001	No Relaxation	N.D.	N.D.
9	Arsenic (as As)	mg/L	IS 3025(part-37)	0.01	0.05	N.D.	N.D.
10	Chromium (as Cr)	mg/L	Annex J of IS:13428	0.05	No Relaxation	N.D.	N.D.
11	Trihalomethanes:						
a)	Bromoform	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
b)	Dibromochloromethane	mg/L	APHA 6232	0.1	No Relaxation	N.D.	N.D.
c)	Bromodichloromethane	mg/L	APHA 6232	0.06	No Relaxation	N.D.	N.D.
d)	Chloroform	mg/L	APHA 6232	0.2	No Relaxation	N.D.	N.D.
D.	Pesticides:-						
1	Alpha HCH	µg/l	USEPA 508		0.01	N.D.	N.D.
2	Beta HCH	µg/l	USEPA 508		0.04	N.D.	N.D.
3	Delta HCH	µg/l	USEPA 508		0.04	N.D.	N.D.
4	Alachlor	µg/l	USEPA 525.2, 507		20	N.D.	N.D.
5	Aldrin / Dieldrin	µg/l	USEPA 508		0.03	N.D.	N.D.
6	Atrazine	µg/l	USEPA 525.2, 8141 A		2	N.D.	N.D.
7	Butachlor	µg/l	USEPA 525.2, 8141 A		125	N.D.	N.D.
8	Chlorpyrifos	µg/l	USEPA 525.2, 8141 A		30	N.D.	N.D.
9	DDT (o,p and p, p-Isomers of DDT, DDE and DDD)	µg/l	USEPA 508		1	N.D.	N.D.
10	Gamma HCH	µg/l	USEPA 508		2	N.D.	N.D.
11	2,4-Dichlorophenoxyacetic Acid	µg/l	USEPA 515.1		30	N.D.	N.D.
12	Endosulphan (alpha, beta)	µg/l	USEPA 508		0.4	N.D.	N.D.

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REPORT NO.0323

### TEST REPORT

SR. NO.	PARAMETER	UNIT	METHOD OF TEST	AS PER IS-10500:2012		RESULT	
				Acceptable Limit	Permissible limit	Kelo River Upstream	Kelo River Down stream
13	Ethion	µg/l	USEPA 1657 A		3	N.D.	N.D.
14	Isoproturon	µg/l	USEPA 532		9	N.D.	N.D.
15	Malathion	µg/l	USEPA 8141 A		190	N.D.	N.D.
16	Methyl Parathion	µg/l	USEPA 8141 A		0.3	N.D.	N.D.
17	Monocrotophos	µg/l	USEPA 8141 A		1	N.D.	N.D.
18	Phorate	µg/l	USEPA 8141 A		2	N.D.	N.D.
<b>E. Microbial Parameters</b>							
1	Total Coliform	MPN/100m 1	IS:1622:1981:RA:2 014		-	17.0	31.0
2	E. Coli	MPN/100m 1	IS:1622:1981:RA: 2014		-	9.0	20.0

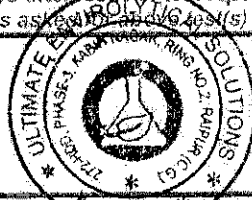
Note: mg/lit.: milligram per liter, N.D.: Not Detected.

**REMARKS: RESULTS ARE AS ABOVE**

**Terms & conditions**

- > The above analysis report refers to the particular sample received at our end and the use of the report for publication, arbitration or as legal dispute is forbidden.
- > Test sample will be retained for 15 days after issue of test report unless otherwise agreed with customer.
- > This is for information as the party has asked for above only.

Prepared by: *Thakur*  
31/08/2020  
PREPARED BY



For ULTIMATE ENVIROLYTICAL SOLUTIONS

*Thakur*  
31/08/2020  
AUTHORIZED SIGNATORY

-----End of the test report-----

## TREATED EFFLUENT QUALITY MONITORING REPORT OF APRIL , 2020 TO SEPTEMBER 2020.

Month	Parameters	Guard Pond	Treated Ash Water Pond	ETP Treated Effluent	STP Treated Effluent (Plant)	Limit
Apr-20	pH	7.4	6.8	7.6	7.3	5.5-9.0
	TSS (mg/l)	34	26	32	23	100
	COD (mg/l)	55	50	60	65	250
	BOD (mg/l)	13.8	11.3	13.4	10.5	30
	Oil &Grease (mg/l)	2	1	2.5	1	10
May-20	pH	7.6	7.2	7.8	7.5	5.5-9.0
	TSS (mg/l)	30	22	28	18	100
	COD (mg/l)	50	45	65	50	250
	BOD (mg/l)	14.5	12.8	6.5	12.6	30
	Oil &Grease (mg/l)	2.5	1.5	2	1.5	10
Jun-20	pH	7.4	7	7.6	7.3	5.5-9.0
	TSS (mg/l)	26	16	20	14	100
	COD (mg/l)	55	50	60	45	250
	BOD (mg/l)	12.8	10.4	7.5	12.2	30
	Oil &Grease (mg/l)	2	1	1.5	1	10
Jul-20	pH	7.5	7.3	7.8	7.4	5.5-9.0
	TSS (mg/l)	35	15	25	20	100
	COD (mg/l)	50	45	55	50	250
	BOD (mg/l)	11.8	9.8	8.3	12.6	30
	Oil &Grease (mg/l)	2.5	1.5	1	1.5	10
Aug-20	pH	7.2	7.2	7.6	7.4	5.5-9.0
	TSS (mg/l)	28	25	20	22	100
	COD (mg/l)	50	40	55	45	250
	BOD (mg/l)	10	9	7.5	11.5	30
	Oil &Grease (mg/l)	3	2	1.5	1	10
Sep-20	pH	7.5	6.9	7.6	7.4	5.5-9.0
	TSS (mg/l)	23	12	16	18	100
	COD (mg/l)	50	45	55	50	250
	BOD (mg/l)	18.4	14.5	15.1	16.8	30
	Oil &Grease (mg/l)	2.5	1.5	2	1.5	10

**Note: -** No effluent is being discharged outside plant premises and zero discharge is being maintained all the time

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF APRIL , 2020

Date	Location-1						Location-2						Location-3						Location-4					
	New Switch Yard						Near Hostel 5						Savitrinagar Colony (Tehlirampur village)						Tamnar village					
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	
Distance (KM) (w.r.t stack)	0.2						0.5						5.0						3.0					
Direction (w.r.t stack)	NW						ESE						ENE						S					
02.04.2020	65.2	24.6	14.7	21.2	0.52		75.3	26.9	10.8	29.7	0.53		71.6	23.5	11.2	22.1	0.32		62.1	21.2	10.7	26.1	0.65	
06.04.2020	67.8	21.7	13.8	21.9	0.56		64.5	27.9	8.5	28.2	0.62		65.1	21.6	10.9	22.6	0.36		60.7	24.1	8.2	27.5	0.69	
09.04.2020	37.9	9.2	9.4	19.8	0.41		54.5	18.8	5.3	27.7	0.58		39.7	10.1	10.4	21.5	0.35		40.7	18.6	8.4	24.2	0.66	
13.04.2020	71.3	23.6	14.7	21.6	0.53		72.3	31.9	10.2	24.3	0.41		59.4	26.3	8.8	21.5	0.28		64.2	20.9	8.4	25.5	0.76	
16.04.2020	42.7	13.1	11.2	19.5	0.49		52.9	25.8	8.1	26.7	0.38		46.1	18.3	8.9	22.3	0.27		52.5	18.6	7.6	25.7	0.69	
20.04.2020	50.7	16.6	11.1	19.2	0.46		71.5	30.7	8	21.5	0.42		53.5	18.9	8.2	21.4	0.34		59.2	21.1	7.8	24.4	0.71	
23.04.2020	43.4	11.5	14.1	20.5	0.44		57.1	22.8	10.1	22.9	0.41		48.9	13.2	7.5	22.2	0.43		51.3	13.4	8.6	20.6	0.61	
27.04.2020	30.7	8.2	11.3	20.6	0.46		42.4	16.2	6.5	23.7	0.37		60.3	21.6	7.8	21.4	0.42		44.3	13.7	9.4	24.4	0.56	
30.04.2020	35.6	12.2	10.3	21.2	0.5		56.3	20.2	8.6	22.9	0.42		54.2	19.3	8.2	21.8	0.45		50.2	16.4	9.5	23.7	0.62	
Permissible Limits	100	60	80	80	2		100	60	80	80	2		100	60	80	80	2		100	60	80	80	2	
Date	Location-5						Location-6						Location-7						Location-8					
	JIPT Building						Gorhi village						Regaon village						Nirman Bhavan					
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	
Distance (KM) (w.r.t stack)	0.2						4.5						3.0						0.2					
Direction (w.r.t stack)	W						SSW						N						S					
02.04.2020	56.5	22.4	8.6	22.6	0.54		NA	NA	NA	NA	NA		71.1	21.5	6.8	21.1	0.51		58.6	23.1	9.8	23.2	0.63	
06.04.2020	52.7	21.2	8.2	22.2	0.58		NA	NA	NA	NA	NA		66.1	24.1	6.4	20.9	0.53		62.3	24.5	10.2	23.8	0.58	
09.04.2020	45.6	16.3	9.3	21.8	0.64		NA	NA	NA	NA	NA		36.3	14	5.6	20.5	0.48		60.7	23.2	12.4	22.7	0.64	
13.04.2020	50.2	20.2	9.5	20.9	0.63		NA	NA	NA	NA	NA		56.5	19.4	6.4	20.7	0.57		56.5	20.3	10.5	21.9	0.62	
16.04.2020	42.3	13	7.8	21.6	0.59		NA	NA	NA	NA	NA		44.7	13.5	5.7	22.4	0.44		50.2	17.8	9.6	23.4	0.57	
20.04.2020	40.8	12.6	7.3	18.9	0.57		NA	NA	NA	NA	NA		58.1	18.5	5.1	21.1	0.55		48.3	18.6	8.9	24.2	0.54	
23.04.2020	43.8	13.2	8.3	19.7	0.56		NA	NA	NA	NA	NA		31.7	11.6	6.8	21.1	0.38		45.8	16.5	8.7	23.6	0.49	
27.04.2020	47.4	15.7	8.6	21.3	0.52		NA	NA	NA	NA	NA		52.9	15.5	6.2	19.6	0.37		52.3	20.7	9.5	22.4	0.52	
30.04.2020	50.2	18.6	7.9	20.9	0.45		NA	NA	NA	NA	NA		48.6	12.8	7.5	20.2	0.42		56.4	23.2	10.5	21.6	0.53	
Permissible Limits	100	60	80	80	2		100	60	80	80	2		100	60	80	80	2		100	60	80	80	2	

Note: All Units in  $\mu\text{g}/\text{m}^3$  except CO (in  $\text{mg}/\text{m}^3$ )

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF MAY, 2020

Date	Location-1				Location-2				Location-3				Location-4							
	New Switch Yard				Near Hostel 5				Savitrinagar Colony (Tehlrampur village)				Tamnar village							
Distance (KM) (w.r.t stack)	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
	0.2				0.5				5.0				3.0							
Direction (w.r.t stack)	NW				ESE				ENE				S							
04.05.2020	47.2	16.5	13.6	20.7	0.38	41.6	17.1	5.4	22.6	0.45	57.2	15.2	6.3	22.6	0.34	47.3	24.7	8.2	21.4	0.53
07.05.2020	34.7	8.1	9.3	18.1	0.45	43.3	16.8	6.8	22.5	0.46	44.6	13.8	6.7	22.1	0.42	42.1	16.1	8.4	NA	0.66
11.05.2020	62.5	15.6	8.1	18.6	0.46	60.1	24.9	7.2	22.8	0.45	53.2	18.9	6.2	21.4	0.43	41.5	16.2	9.3	NA	0.67
14.05.2020	73.7	24.3	12.1	19.5	0.45	68.6	31.6	10.7	25.8	0.39	63.1	21.8	7.6	20.8	0.55	49.9	23.5	10.2	NA	0.78
18.05.2020	73.7	17.2	8.1	19.8	0.48	75.5	18.3	9.1	27.5	0.44	64.2	11.9	5.6	21.6	0.54	NA	NA	NA	NA	NA
21.05.2020	65.3	18.3	8.9	20.9	0.44	61.6	26.4	8.5	26.6	0.48	40.6	21.1	16.9	21.8	0.41	37.8	17.1	6.8	NA	0.67
25.05.2020	60.5	21.9	16.8	20.6	0.41	74.2	28.5	9.9	28.7	0.44	55.4	25.7	14.3	21.4	0.54	59.4	28.5	13.3	23.5	0.75
28.05.2020	75.3	18.3	15.6	20.7	0.52	69.1	30.2	11.7	24.7	0.42	63.3	33.9	12.4	20.8	0.47	NA	NA	NA	NA	NA
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5				Location-6				Location-7				Location-8							
Distance (KM) (w.r.t stack)	JIPT Building				Gorhi village				Regaon village				Nirman Bhavan							
Direction (w.r.t stack)	W				SSW				N				S							
04.05.2020	65.2	23.2	10.5	21.3	0.54	NA	NA	NA	NA	NA	38.7	10.9	5.8	20.8	0.38	62.1	20.1	9.7	20.6	0.52
07.05.2020	58.2	20.1	8.9	22.3	0.51	NA	NA	NA	NA	NA	44.2	12.4	6.8	20.7	0.46	54.6	17.6	8.6	21.4	0.56
11.05.2020	61.6	22.4	9.8	21.8	0.53	NA	NA	NA	NA	NA	53.8	16.8	9.8	21.1	0.62	58.4	20.2	9.2	20.5	0.62
14.05.2020	55.2	18.6	9.2	22.5	0.57	NA	NA	NA	NA	NA	75.7	22.5	6.5	22.3	0.55	50.3	16.7	8.6	21.2	0.64
18.05.2020	63.8	21.2	11.7	23.1	0.64	NA	NA	NA	NA	NA	74.2	17.9	8.7	21.3	0.49	57.6	19.3	9.5	22.3	0.68
21.05.2020	67.2	23.6	10.8	22.7	0.62	62.6	21.7	8.8	22.1	0.41	65.1	23.7	8.5	20.9	0.52	64.5	22.4	10.5	20.8	0.63
25.05.2020	64.5	22.1	13.5	21.6	0.58	54.3	27.5	10.5	20.3	0.52	64.9	25.2	7.8	20.2	0.47	60.3	20.1	12.2	21.1	0.52
28.05.2020	68.3	24.6	12.3	22.4	0.56	59.1	24.1	8.2	19.9	0.68	69.1	27.8	7.3	18.1	NA	63.5	21.3	10.8	20.7	0.57
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in µg/m<sup>3</sup> except CO (in mg/m<sup>3</sup>)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF JUNE, 2020

Date	Location-1				Location-2				Location-3				Location-4							
	New Switch Yard				Near Hostel 5				Savitrinagar Colony (Tehlrampur village)				Tamnar village							
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
Distance (KM) (w.r.t stack)	0.2				0.5				5.0				3.0							
Direction (w.r.t stack)	NW				ESE				ENE				S							
01.06.2020	52.2	18.3	12.8	21.9	0.46	57.2	31.3	14.4	25.9	0.67	52.5	25.1	12.1	22.8	0.31	67.6	33.2	13.2	28.5	0.85
04.06.2020	39.9	7.5	9.2	21.2	0.44	46.5	19.6	10.2	25.7	0.47	60.7	18.7	11.3	21.7	0.36	NA	NA	NA	NA	NA
08.06.2020	75.7	20.4	13.1	21.1	0.52	71.5	33.8	9.5	NA	0.43	54.1	27.2	10.2	20.1	0.53	47.1	17.3	9.8	20.8	0.71
11.06.2020	59.1	13.5	15.2	22.1	0.53	50.8	16.9	13.6	23.2	0.65	68.1	18.2	7.2	25.3	0.42	41.6	14.8	13.5	22.7	0.69
15.06.2020	35.6	14.7	7.4	20.1	0.36	27.2	7.7	13.5	27.8	0.64	30.8	14.9	10.8	24.5	0.32	36.7	11.4	8.1	24.6	0.67
18.06.2020	35.8	13.8	6.8	19.8	0.42	36.6	13.4	10.8	27.5	0.64	41.9	15.1	7.9	25.1	0.48	45.8	16.3	11.3	20.6	0.61
22.06.2020	40.6	13.7	9.8	19.5	0.39	36.3	12.3	9.3	23.8	0.61	33.3	13.4	10.1	24.6	0.42	38.4	15.5	9.4	21.2	0.62
25.06.2020	55.8	19.6	13.1	23.3	0.49	40.1	15.9	9.9	26.8	0.63	21.6	18.5	7.5	24.8	0.54	62.5	19.9	15.4	19.3	0.64
29.06.2020	48.4	18.1	10.1	23.2	0.46	43.5	21.6	10.1	26.9	0.62	33.2	32.1	8.6	25.1	0.55	70.8	27.1	16.3	19.6	0.63
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5				Location-6				Location-7				Location-8							
	JIPT Building				Gorhi village				Regson village				Nirman Bhavan							
	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
Distance (KM) (w.r.t stack)	0.2				4.5				3.0				0.2							
Direction (w.r.t stack)	W				SSW				N				S							
01.06.2020	58.6	16.3	11.3	21.3	0.65	46.5	21.1	8.7	19.8	0.68	40.1	14.9	6.9	18.3	NA	54.2	14.5	9.8	19.8	0.61
04.06.2020	60.4	18.4	10.8	22.2	0.59	59.8	26.1	11.3	19.8	0.58	34.4	11.8	6.8	19.7	NA	56.8	16.7	10.2	20.4	0.53
08.06.2020	63.5	20.5	11.5	23.1	0.54	58.1	25.2	8.8	22.3	0.62	59.7	24.1	7.9	25.2	NA	59.3	18.2	9.7	21.2	0.47
11.06.2020	56.4	17.3	10.3	20.3	0.58	42.5	16.8	9.8	19.8	0.61	50.5	21.5	7.3	21.4	NA	52.4	15.6	8.9	19.3	0.52
15.06.2020	32.5	11.2	8.5	18.7	0.41	26.2	12.1	9.5	21.1	0.52	28.2	11.9	6.6	20.8	NA	28.3	9.8	7.9	17.9	0.38
18.06.2020	28.6	10.1	7.8	17.9	0.52	40.1	12.5	8.6	22.5	0.44	31.5	12.4	6.7	21.4	NA	24.2	8.6	7.4	16.8	0.48
22.06.2020	34.2	13.2	8.6	16.8	0.57	39.7	15.2	7.6	21.2	0.54	23.8	10.5	7.1	21.6	NA	30.6	11.4	8.2	15.9	0.54
25.06.2020	64.5	21.2	11.5	20.8	0.76	55.8	23.4	12.8	16.9	0.47	36.2	12.3	7.2	18.3	NA	60.4	19.3	10.6	19.6	0.72
29.06.2020	68.2	23.4	12.8	21.6	0.72	58.3	21.2	10.1	17.1	0.52	31.4	10.2	6.8	20.6	NA	64.8	21.2	11.8	20.3	0.68
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in  $\mu\text{g}/\text{m}^3$  except CO (in  $\text{mg}/\text{m}^3$ )

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF JULY, 2020

Date	Location-1				Location-2				Location-3				Location-4							
	New Switch Yard				Near Hostel 5				Savitrinagar Colony (Tehrirampur village)				Tamnar village							
Distance (KM) (w.r.t stack)	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
	0.2				0.5				5.0				3.0							
Direction (w.r.t stack)	NW				ESE				ENE				S							
02.07.2020	59.9	21.9	10.9	21.9	0.48	47.7	18.5	11.6	26.9	0.55	46.1	23.8	11.9	24.6	0.65	62.8	23	13.6	20.6	0.62
06.07.2020	32.8	11.7	6.5	24.8	0.37	31.2	14.1	8.9	26.7	0.61	48.5	18.3	8.5	25.4	0.6	57.1	22.8	10.3	20.2	0.64
09.07.2020	35.7	12.4	8.5	23.6	0.49	26.4	13.9	14.4	28.9	0.45	41.7	10.1	11.6	23.8	0.58	41.1	12.3	12.5	19.7	0.63
13.07.2020	NA	NA	NA	NA	NA	57.8	30.9	13.4	29.5	0.48	69.8	27.2	9.1	22.6	0.34	73	30.6	9.3	19.4	0.61
16.07.2020	NA	NA	NA	NA	NA	47.6	20.3	11.8	26.8	0.52	39.2	13.9	8.4	22.5	0.32	42.6	19.7	9.1	20.1	0.63
20.07.2020	NA	NA	NA	NA	NA	46.6	20.1	6.8	31.5	0.44	37.3	15.9	12.2	22.7	0.4	58.7	21.4	9.7	19.3	0.6
23.07.2020	NA	NA	NA	NA	NA	31.7	11.4	11.5	30.1	0.52	32.6	14.2	17.5	22.9	0.44	39.1	13.5	8.9	19.4	0.62
27.07.2020	33.1	14.6	7.9	NA	0.41	53.1	28.5	9	24.3	0.43	43.8	21.9	13.2	22.9	0.48	73.8	32.4	11.4	19.5	0.66
30.07.2020	35.9	13.2	7	NA	0.49	37.8	13.3	9.2	23.5	0.47	52.1	22.7	10.4	23.2	0.35	45.5	17.7	12.1	19.4	0.65
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
	0.2				4.5				3.0				0.2							
Direction (w.r.t stack)	W				SSW				N				S							
02.07.2020	58.2	22.3	10.6	23.2	0.61	54.1	25.4	11.1	16.9	0.53	37.7	17.8	6.8	25.2	NA	54.5	20.3	12.3	20.3	0.56
06.07.2020	45.6	16.4	8.9	21.5	0.7	41.3	19.1	10.1	21.4	0.55	27.4	14.9	6.6	22.4	NA	42.2	14.6	9.8	21.2	0.54
09.07.2020	38.5	12.4	9.2	20.8	0.6	39.2	17.5	9.1	23.8	0.55	24.2	11.3	6.6	21.2	NA	35.6	10.8	9.5	19.8	0.62
13.07.2020	48.6	18.6	10.7	22.6	0.6	58.3	29.9	18.9	32.7	0.55	NA	20.4	6.9	19.5	NA	44.5	16.3	7.9	20.8	0.59
16.07.2020	56.3	20.1	12.3	23.1	0.6	35.7	13.8	12.6	25.1	0.53	NA	18.6	7.2	18.9	NA	52.4	18.2	10.3	21.2	0.64
20.07.2020	62.2	23.2	13.2	22.4	0.7	33.4	19.7	19.5	32.5	0.53	NA	16.5	6.6	17.2	NA	58.6	21.1	11.2	22.1	0.66
23.07.2020	44.3	14.1	9.6	20.2	0.5	33.6	14.2	18.1	32.4	0.56	NA	12.3	5.3	16.5	NA	40.3	12.6	8.6	18.9	0.57
27.07.2020	56.5	17.3	10.5	22.8	0.7	32.3	12.7	17.2	32	0.52	NA	19.2	6.9	18.7	NA	52.7	15.4	9.8	21.5	0.68
30.07.2020	65.3	18.5	12.4	23.6	0.6	32.9	15.6	18.7	32.4	0.56	45.9	17.5	6.6	19.5	0.62	61.6	16.8	10.8	22.6	0.63
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in µg/m<sup>3</sup> except CO (in mg/m<sup>3</sup>)



AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF AUGUST, 2020

Date	Location-1				Location-2				Location-3				Location-4							
	New Switch Yard				Near Hostel 5				Savitrinagar Colony (Tehlrampur village)				Tamnar village							
Distance (KM) (w.r.t stack)	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
	0.2				0.5				5.0				3.0							
Direction (w.r.t stack)	NW				ESE				ENE				S							
03.08.2020	38.9	12.4	7.1	NA	0.48	51.6	20.2	7.3	25.4	0.56	40.7	16.5	10.6	23.1	0.46	51.3	19.8	8.4	23.8	0.68
06.08.2020	20.8	6.4	7.5	NA	0.47	31.6	10.9	8.7	31.2	0.52	20.2	11.2	13.6	22.3	0.33	32.1	12.3	12	21.4	0.6
10.08.2020	16.9	5.3	6.7	NA	0.49	20.8	10.2	6.7	29.4	0.48	32.6	12.4	12.1	23.2	0.34	28	7.8	10.9	22.4	0.58
13.08.2020	26.4	7.3	7.2	NA	0.52	44.9	14.1	7.5	26.9	0.54	26.4	15.3	11.4	22.3	0.36	50.7	16.9	8.5	22.1	0.6
17.08.2020	24.4	6.8	7.4	NA	0.48	22.7	13.6	11.8	30.8	0.47	30.1	8.5	9.9	23.1	0.39	35	10.9	6.3	21.9	0.47
20.08.2020	19.1	7.2	7.1	NA	0.52	17.6	11.8	11.2	30.5	0.44	30.3	9.2	10.8	23.4	0.42	29.8	11.2	6.5	23.2	0.44
24.08.2020	30.4	9.9	7	NA	0.49	75.5	33.5	14.2	24.5	0.43	25.7	12.1	11.7	23.6	0.36	71.2	23.6	8.1	22.5	0.54
27.08.2020	20	12.8	6.7	22.7	0.43	12.4	7.2	13.3	24.9	0.42	31.2	6.3	9.1	22.9	0.38	20.2	8.5	6.6	20.7	0.4
31.08.2020	53.5	20.2	7.9	25.3	0.45	73.2	29.1	15.6	24.8	0.47	54.7	21.4	9.5	23.1	0.42	67.2	23.7	7.3	21.6	0.48
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5				Location-6				Location-7				Location-8							
	JIPT Building				Gorhti village				Regaon village				Nirman Bhavan							
Distance (KM) (w.r.t stack)	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
	0.2				4.5				3.0				0.2							
Direction (w.r.t stack)	W				SSW				N				S							
03.08.2020	46.8	17.5	9.6	22.6	0.5	NA	NA	NA	NA	NA	45.7	14.3	6.7	20.3	0.48	42.2	14.6	9.5	21.9	0.52
06.08.2020	38.5	12.2	8.8	20.8	0.4	35.9	17.3	7.8	21.5	0.44	45.8	13.8	6.9	18.2	0.43	35.4	10.2	8.6	20.3	0.54
10.08.2020	34.2	10.6	8.4	21.2	0.4	35.2	11.6	12.1	23.9	0.55	46.3	18.4	6.6	19.4	0.39	26.5	8.9	8.2	20.8	0.49
13.08.2020	44.6	13.4	9.2	22.1	0.5	39.7	10.2	11.4	23.7	0.54	36.9	15.6	6.5	16.9	0.79	38.2	11.5	9.1	21.8	0.45
17.08.2020	52.2	20.2	10.2	23.2	0.6	42.2	16.8	12.3	25.1	0.58	36.6	NA	7.9	20.6	0.65	45.1	17.6	9.7	22.1	0.53
20.08.2020	36.5	12.6	8.6	19.8	0.5	41.9	13.8	8.5	21.4	0.57	36.3	NA	6.9	21.4	0.49	32.2	10.1	8.4	18.9	0.57
24.08.2020	54.2	19.6	11.2	21.8	0.6	47.3	19.5	13.8	23.5	0.43	36.9	NA	9.2	22.6	0.46	48.3	16.3	10.5	20.4	0.59
27.08.2020	35.6	11.7	7.9	20.7	0.6	34.4	12.9	8.8	20.3	0.56	36.1	NA	8.7	23.2	0.51	28.9	10.2	7.6	19.2	0.55
31.08.2020	68.4	22.3	12.2	22.8	0.7	48.1	16.5	10.3	20.6	0.62	43.7	NA	8.9	24.2	0.61	65.3	20.7	11.7	21.8	0.62
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in µg/m<sup>3</sup> except CO (in mg/m<sup>3</sup>)

AMBIENT AIR QUALITY MONITORING DATA FOR THE MONTH OF SEPTEMBER, 2020

Date	Location-1				Location-2				Location-3				Location-4							
	New Switch Yard				Near Hostel 5				Savitrinagar Colony (Tehlrampur village)				Tamnar village							
Distance (KM) (w.r.t stack)	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
Direction (w.r.t stack)	0.2				0.5				5.0				3.0							
	NW				ESE				ENE				S							
03.09.2020	65	21.2	6.7	22.8	0.45	59.6	17.8	9.8	25.1	0.46	60.2	20.8	10.2	23.3	0.43	66.4	25.1	14.1	25.7	0.43
07.09.2020	76.1	15.1	7.3	23.8	0.53	76.2	23.9	9.4	25.7	0.51	56.8	19.3	10.8	23.1	0.37	73.4	23.5	12.3	22.5	0.53
10.09.2020	56.5	18.9	7.1	22.6	0.44	87.3	28.9	13.6	27.2	0.46	59.8	15.9	14.7	20.6	0.42	60.7	22	10.5	22.6	0.52
14.09.2020	59.9	19.4	6.9	22	0.45	74.4	24.5	15.4	26.1	0.43	62.5	21.5	13.2	21.3	0.32	64.1	18.7	11.6	23.7	0.47
17.09.2020	50.1	17	9.4	24.4	0.42	68.7	30.8	10.9	25.5	0.44	63.6	17.7	13.8	20.4	0.4	61.4	16.3	11.4	24.5	0.44
21.09.2020	44.8	12	8.6	24.2	0.45	42.2	21.7	8.7	26.8	0.47	31.5	13.7	9.2	20.8	0.45	32.4	10.6	8.3	22.9	0.52
24.09.2020	53.8	16.8	8.7	23.9	0.43	61.2	26.8	10.2	26.2	0.42	53.6	16.2	11.2	19.8	0.42	53	17.7	12.1	23.8	0.59
28.09.2020	65.2	18	9.1	24.1	0.46	69.1	32.7	7.9	25.1	0.56	49.1	16.6	13.1	19.7	0.43	69.1	24.9	14.7	24.3	0.68
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2
Date	Location-5				Location-6				Location-7				Location-8							
	JIPT Building				Gorhi village				Regaon village				Nirman Bhavan							
Distance (KM) (w.r.t stack)	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO
Direction (w.r.t stack)	0.2				4.5				3.0				0.2							
	W				SSW				N				S							
03.09.2020	68.5	23.2	12.3	23.8	0.7	38.4	18.7	7.3	22.1	0.59	36.7	NA	8.6	23.2	0.66	64	23	11	22.3	0.69
07.09.2020	72.2	26.3	13.8	24.5	0.7	64.3	24.3	8.4	24.4	0.54	42.8	NA	8.5	24.8	0.71	68	25	12	23.1	0.67
10.09.2020	65.9	24.8	12.2	25.2	0.6	62.3	23.6	8.6	26.4	0.65	56.5	NA	9.3	23.4	0.65	61	22	10	22.8	0.59
14.09.2020	64.8	23.9	11.8	23.6	0.6	45.6	16.4	8.6	23.1	0.56	56.9	NA	9.1	23.5	0.55	60	20	9.8	21.9	0.62
17.09.2020	70.3	26.4	14.3	25.4	0.7	42.8	12.3	10.8	24.1	0.59	48.8	NA	8.6	24.3	0.45	67	23	12	23.4	0.64
21.09.2020	38.2	13.2	8.9	22.2	0.5	48.8	20.4	13.3	21.9	0.57	42.5	NA	8.5	23.2	0.52	36	12	8.2	21.2	0.57
24.09.2020	58.9	20.3	10.2	23.1	0.7	37.3	16.8	10.8	25.6	0.38	40.2	15.3	7.6	22.9	0.56	55	20	9.6	22.4	0.59
28.09.2020	67.3	22.8	11.8	24.3	0.6	44.3	19.2	9.4	24.7	0.54	37.7	15.1	7.4	20.5	0.62	63	22	10	23.5	0.56
Permissible Limits	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2	100	60	80	80	2

Note: All Units in µg/m<sup>3</sup> except CO (in mg/m<sup>3</sup>)