

# ENVIRONMENTAL CLEARANCE (J-11015/121/2009 - IA.II(M))

October'14 to March'15

INTEGRATED ASHOK WASHERY cum FBC

# (PIPARWAR AREA)

**CENTRAL COALFIELDS LIMITED** 

Status of compliance of the terms and conditions given in the Environmental clearance letter No. J-11015/121/2009- IA. II (M) dt.  $3^{rd}$  May'2012 issued by MOEF, Govt. of India, New Delhi for production capacity of 10.00 MTPA for Integrated Ashoka Washery cum FBC based TPP(2X30 MW) in 24 Ha.

Period – Oct'2014 to March'2015.

## A. SPECIFIC CONDITIONS

SL.	CONDITION	STATUS
NO		
i	Washery is to be sited 500m from the mine. The internal transport of the entire raw coal and clean coal within the washery and coal rejects to the pit head FBC base TPP shall be by closed belt conveyors only.	The proposed site is about 500 mt from the mine working.
ii	The company shall prepare a Plan for transportation of the entire washed coal by rail mode only. Clean coal shall be transported to the railway siding by conveyors (200m) and onto wagons by silo loading and coal rejects shall be also transported by closed conveyors (600m) to the FBC based Plant where it would be loaded using silos.	Construction of Ashoka railway siding is under progress. By Eastern railway. CCL has already funded for an amount of Rs. 129 crores.
iii	The FBC based TPP shall be commissioned within 2 years of grant of this environmental clearance and thereafter clean coal shall be transported by rail only.	FBC plant has been proposed by the side of the Washery.
iv	The entire coal rejects shall be used in the pit-head FBC based TPP.	The entire coal rejects will be used by the proposed FBC based TPP.
V	Land for the three Ash Ponds identified within the FBC based TPP area and used as water reservoirs shall be used for temporary storage of fly ash only.	Agreed.
vi)	The entire ash produced from the FBC based TPP shall be used in Cement Plant (s) and for which a long-term MOU shall be entered into.	Agreed.
vii	The entire quantum of clean coal and coal rejects to the railway siding to be established near the washery and to FBC based TPP respectively shall be transported by closed conveyors only.	Agreed.
viii	The proponent shall maintain proper records of details (quantum and ash content) of every batch of every batch of raw (ROM) coal received in the washery and details (quantum and ash content) of washed (clean coal) and coal rejects generated in the Coal washery. In addition, records of details of every batch of coal rejects (quantum and ash content) dispatched to the pit head FBC based TPP shall also be maintained. These records shall be uploaded on the company website every month. The MOU entered with various companies for use of fly ash and details of quantum of fly-ash being dispatched from the FBC based TPP to the Cement Plants shall also be displayed along with dispatch details on the company's website.	Agreed.

ix	The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site(s) within stockyards fitted with wind breaker/shields. Adequate measures shall be taken to ensure that the stored minerals do not catch fire.	Agreed.
X	Hoppers of the coal crushing unit and washery unit shall be fitted with high efficiency bag filters and mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation road.	Agreed.
xi	Green belt of 2 ha. shall be developed all along the periphery of the washery site, along the areas such as the washery unit, crushing unit and stock yard and 5 ha. Along the FBC based TPP. At the post project stage, a total combined area of 54.28 ha. Would be developed as plantation.	Agreed.
xii	The main approach roads shall be black topped and all internal roads shall be concreted. The internal roads shall be regularly cleaned with mechanical sweepers. A 3-tier avenue plantation developed along the internal roads, stockyards and approach roads to the washery, FBC based TPP and in and around the Railway siding.	Agreed for implementation. It is to be done after construction of washery.
xiii	The entire water requirement of the washery-cum FBC based TPP shall be mine pit water of Ashok OCP and rainwater stored in the three ponds/water reservoirs. The company shall not use groundwater for the washery – cum FBC based TPP operations. Any additional water requirement envisaged shall be obtained by recycle/reuse to the maximum externt and from rainwater harvesting measures.	Agreed.
xiv	Industrial wastewater (workshop and wastewater from the washery) shall be properly collected, treated	Agreed.
XV	The washery unit shall be a zero-discharge facility and no waste-water shall be discharged from the washery into the drains/ natural water course. Recycled water shall be used for development and maintenance of green belt and in plant operations.	Agreed.
xvi	Socio-economic and welfare measures for the local communities shall be implemented under CSR with an annual revenue expenditure of Rs.5 / tonne of coal.	Agreed.
xvii	Heavy metal content before and after washing of coal and in the flyash shall be analysed once in six months and records maintained thereof.	It will be done during operation of washery.
xviii	Corporate Environment Responsibility a).The company shall have a well laid down Environment Policy approved by the Board of Directors.	Agreed.
	b). The Environment policy shall prescribe for standard operating process / procedures to bring in to focus any infringements / deviation/ violation of the environmental or forest norms/conditions.	Agreed.
	c). The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.	Agreed.
	d). To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or stakeholders or stakeholders at large.	Agreed.

## **B. GENERAL CONDITIONS**

SL.	CONDITION	STATUS
N	CONDITION	511105
<b>O</b> .		
i.	No change in technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.	Agreed.
ii.	No change in the calendar plan for washing the quantum of mineral coal and waste produced shall be made.	Agreed.
iii.	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone of the coal washery-cum-FBC based TPP for monitoring PM10,PM2.5, SO2, NOx Locations of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	Agreed.
iv.	Fugitive dust emissions (PM10, PM2.5, SO2, NOx) from all the sources of the washery and FBC based TPP shall be regularly monitored and data recorded properly. Water spraying arrangement on roads, wagon loading and unloading points shall be provided properly maintained, monitoring of heavy metals such as Hg, Pb,As,Cr etc shall be done once in six months and records maintained thereof.	Agreed.
V.	Periodic monitoring report with data on amblent air quality (PM10, PM2.5, SO2, NOx) and heavy metals such as Hg, Pb,As,Cr etc shall be regularly submitted to the Ministry including its Regional Office at Bhubneshwar and to the State Pollution Control Board and the Central Pollution Control Board once in six months.	It will be done during the operation of the washery.
vi.	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operators, operation of HEMM, etc shall be provided with ear plugs/muffs.	It will be done during the operation of the washery.
vii.	Vehicular emissions shall be kept under control and regularly monitored.	It will be done during the operation of the washery.
viii	Environmental quality shall be regularly monitored and got analyised through an Environmental laboratory established under the Environment (Protection) Act,1986.	Agreed.
ix.	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Operational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to duct and to take corrective measures, if needed.	Agreed.
х.	An environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Company.	Agreed.

xi.	The funds earmarked for environmental protection metadate one. Year-wise separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office at	Agreed.
xii.	The Regional Office of this Ministry located at Bhubaneshwar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.	Agreed.
xiii	A copy will be marked to concerned Panchayat / Local NGO, if any, from whom any suggestion / representation has been received while processing the proposal	
xiv	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.	To be done by JSPCB
XV.	The Project authorities should advertise at least in two local newspapers widely circulated around the Project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the Project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the ministry of Environment and Forests at http://envfor.nic.in.	published in Hindustan, Prabhat

(PROJECT OFFICER) INTEGRATED ASHOK WASHERY CUM FBC

Lab No. T-2187	Job No. 094314026	Year	2014-15	
Type of Sample:	Ambient Air	Quarter Ending	March '15	
Customer / W. O. no. & Date:	CCL/DGM-HOD (E&F)/2014/	Date of Receipt	22.01.15 & 05.03.15	
	Dt. 29/04/14	of Sample:		
Mode of Receipt of Sample:	Jointly sampling with customer	Date of Analysis:	22.01.15-09.02.15 & 09.03.15	
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010,	Date of	09.02.15 & 09.03.15	
	Methods for Measurement of Air Pollution	Reporting:		
Testing Protocol:	Gazette Notification no. G.S.R 742(E) dt.25 <sup>th</sup> Sept.'2000			
Remarks & Observation:	All samplers placed 1.5 m above ground level			

#### TEST RESULT

The sample has been tested with the following results:-

Area :	Piparwar	Project:	Ashoka OCP
Stations:	<ol> <li>Benti Village</li> <li>Tola Across Bentinala/Barwa Tola</li> </ol>		<b>Date of Sampling:</b> 15-16/01/2015 & 03-04/03/2015 15-16/01/2015 &
	<ol> <li>Ashok Pit</li> <li>Bijan Village</li> </ol>		02-03/03/2015 02-03/03/2015 03-04/03/2015

S.No	<b>Test Parameters</b>	Units	Test Method		TEST R	ESULT	
	Statio	ons:		1	2	3	4
1	Total Particulate Matter ( $PM_{10}$ + > $PM_{10}$ )	µg/m³	Lab.SOP 4 based on – IS: 5182/23, 2006	402	382	-	-
2	Particulate Matter (PM <sub>10</sub> )	µg/m³	IS: 5182/23 2006	287	145	-	-
3	Particulate Matter (PM <sub>2.5</sub> )	µg/m³	-	46	54	48	52
4	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS: 5182 /02 2001 R-2006	<25	<25	-	-
5	Nitrogen Oxides (as NO <sub>x</sub> )	µg/m³	IS: 5182 /02 1975 R-1998	18	21	_	-

Note: Gazette Notification no. G.S.R 742(E) dt.25<sup>th</sup> Sept.'2000 is enclosed along for reference

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Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested
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Lab No. T-2187	Job No. 094314026	Year	2014-15
Type of Sample:	Noise	Quarter Ending	March '15
Customer / W. O. no. & Date:	CCL/DGM-HOD (E&F)/2014/ Dt. 29/04/14	Date of Receipt of Sample:	22.01.15
Mode of Receipt of Sample:	Jointly sampling with customer	Date of Analysis:	-
Testing Protocol:	Gazette Notification no. G.S.R 742(E) dt.25 <sup>th</sup> Sept.'2000	Date of Reporting:	-
Remarks:			

### TEST RESULT

**Project:** 

The sample has been tested with the following results:-

Area :

Stations:

- Benti Village
   Tola Across Bentinala
   3.
- 3. 4.

Noise Level

Piparwar

Station Name	Date of Sampling	Noise Level
Benti Village	15/01/2015	48.3
Tola Across Bentinala	15/01/2015	47.4

Permissible Limit of Noise Level vide Gazette Notification G.S.R. 742(E) Dt. 25th Sep '2K

6.00 AM to 10.00 PM	10.00 PM to 6.00 AM
Leq 75 dB(A)	Leq 70 dB(A)

**Checked By** 

Ashoka OCP

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Lab No. T-2187	Job No. 094314026	Year	2014-15
Type of Sample:	Effluent Water	Quarter Ending	March '15
Customer / W. O. no. & Date:	CCL/DGM-HOD(E&F)/2014/ Dt. 29/04/14	Date of Receipt of Sample:	22.01.15
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	22.01.15-31.01.15
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'	Date of Reporting:	31.01.15
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

#### TEST RESULT

**Project:** 

The sample has been tested with the following results:-

Area :

Stations:

Lagoon discharge
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**Piparwar** 

MOEF -SCH-VI SI.No. Parameter **Sampling Stations Detection Limit BIS Standard & Method** STANDARDS Class 'A' 1 2 3 Ammonical Nitrogen, mg/l, Max 0.24 0.02 50.0 IS 3025/34:1988, 1 R: 2009, Nessler's 2 Arsenic (as As), mg/l, Max < 0.002 0.002 0.2 IS 3025/37:1988 R : 2003, AAS-VGA IS 3025 /44:1993,R:2003 3 B.O.D (3 days 27°C), mg/l, Max 2.00 2.00 30.0 3 day incubation at 27°C APHA 22<sup>nd</sup> Edition AAS-GTA 4 Cadmium(as Cd), mg/l, Max < 0.0005 0.0005 2.0 36 4.00 250.0 APHA, 22nd Edition, Closed Reflux, 5 COD, mg/l, Max Titrimetric IS 3025/42: 1992 Copper (as Cu), mg/l, Max < 0.03 0.03 3.0 6 R: 2009, AAS-Flame APHA, 22nd Edition 7 Dissolved Phosphate, mg/l, Max < 0.30 0.30 5.0 Molybdovanadate APHA, 22nd Edition, SPADNS 8 Fluoride (as F) mg/l, Max 0.49 0.02 2.0 IS:3025/34:1988, Nesseler's 9 Free Ammonia, mg/l, Max < 0.01 0.01 5.0 Hexavalent Chromium, mg/l, Max < 0.01 0.01 0.1 APHA, 22<sup>nd</sup> Edition, Diphenylcarbohydrazide 10 < 0.06 0.06 3.0 IS 3025 /53 : 2003, 11 Iron (as Fe), mg/l, Max R: 2009, AAS-Flame APHA, 22nd Edition, AAS-GTA 12 Lead (as Pb), mg/l, Max < 0.005 0.005 0.1 IS-3025/59:2006, AAS-Flame 13 Manganese(as Mn), mg/l, Max < 0.02 0.02 2.0 IS-3025/54:2003, AAS-Flame 14 Nickel (as Ni), mg/l, Max < 0.10 0.10 3.0 APHA, 22<sup>nd</sup> Edition, Nitrate Nitrogen, mg/l, Max 0.50 10.0 15 1.6 UV-Spectrphotometric Oil & Grease, mg/l, Max < 2.00 2.00 10.0 IS 3025/39:1991, R : 2003, Partition 16 Gravimetric 7.92 IS-3025/11:1983, R-1996, 17 pH value 25 5.5 to 9.0 Electrometric APHA, 22<sup>nd</sup> Edition Phenolic compounds < 0.002 0.002 18 1.0 4-Amino Antipvrine (as C6H5OH),mg/l, Max APHA, 22<sup>nd</sup> Edition, AAS-GTA 19 Selenium (as Se), mg/l, Max < 0.002 0.002 0.05 APHA, 22nd Edition 0.005 20 Sulphide (as SO3), mg/l, Max < 0.005 2.0 Methylene Blue 21 Temperature (°C) 22.2 Shall not exceed IS-3025/09:1984, Thermometeric 5º C above the receiving temp IS-3025/52:2003, AAS-Flame 22 Total Chromium (as Cr), mg/l, Max < 0.06 0.06 2.0 23 Total Kjeldahl Nitrogen, mg/l, Max 1.20 1.00 100.0 IS:3025/34:1988, Nesseler's APHA, 22nd Edition, DPD < 0.02 0.02 1.0 24 Total Residual Chlorine, mg/l, Max IS 3025/17·1984 25 Total Suspended Solids, mg/l, Max 34 10.00 100.0 R :1996, Gravimetric IS 3025 /49 : 1994, Zinc (as Zn), mg/l, Max 0.01 0.01 5.0 26 R : 2009. AAS-Flam

#### Analysed By

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G.M (Chemist) Env. Lab, CMPDI(HQ) (Authorized Signatory)

Ashoka OCP

20/01/2015

**Date of Sampling:** 

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Lab No. T-2187	Job No. 094314026	Year	2014-15
Type of Sample:	Surface Water	Quarter Ending	March '15
Customer / W. O. no. & Date:	CCL/DGM-HOD(E&F)/2014/ Dt. 29/04/14	Date of Receipt of Sample:	22.01.15
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	22.01.15-31.01.15
Testing Protocol:	-	Date of Reporting:	31.01.15
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

### TEST RESULT

The sample has been tested with the following results:-

Area :	Piparwar	Project:	Ashoka OCP
Stations:	<ol> <li>Benti nala near Quarry</li> <li>3.</li> </ol>		Date of Sampling: 20/01/2015

Sl.	Parameter	Sampling Stations			Detection	BIS Standard &	
No		1	2	3	4	Limit	Method
1	Arsenic (as As), mg/l, Max	< 0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	3.00				2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	< 0.0005				0.0005	APHA, 22 <sup>nd</sup> Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	56				2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	< 0.03				0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Disolved Oxygen, min.	4.40				0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.43				0.02	APHA, 22 <sup>nd</sup> Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	< 0.01				0.01	APHA, 22 <sup>nd</sup> Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	< 0.06				0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	< 0.005				0.005	APHA, 22 <sup>nd</sup> Edition AAS-GTA
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	6.20				0.50	APHA, 22 <sup>nd</sup> Edition, UV-Spectrphotometric
12	pH value	7.77				2.5	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	< 0.002				0.002	APHA, 22 <sup>nd</sup> Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	< 0.002				0.002	APHA, 22 <sup>nd</sup> Edition AAS-GTA
15	Sulphate (as SO <sub>4</sub> ) mg/l, Max	38				2.00	APHA, 22 <sup>nd</sup> Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	460				25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	46				10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	< 0.01				0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

#### Analysed By

#### Checked By

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G.M (Chemist) Env. Lab, CMPDI(HQ) (Authorized Signatory)

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Lab No. T-2187	Job No. 094314026	Year	2014-15	
Type of Sample:	Drinking Water	Quarter Ending	March '15	
Customer / W. O. no. & Date:	CCL/DGM-HOD (E&F)/2014/ Dt. 29/04/14	Date of Receipt of Sample:	22.01.15	
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	22.01.15-31.01.15	
Testing Protocol:	IS:10500 Drinking Water Standards	Date of Reporting:	31.01.15	
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent			

#### TEST RESULT

The sample has been tested with the following results:-

Area :	Piparwar	Project:	Ashoka OCP
Stations:	1. Well Water / Ground Water in the Mit 2.	ne Premises	Date of Sampling: 13/01/2015

3.

SI.N	Parameter	Sampling Stations		Detection	IS:10500 Drinking Water	Standard / Test	
0		1	2	3	Limit	Standards	Method
1	Boron (as B), mg/l, Max	< 0.20			0.20	0.5	APHA, 22 <sup>nd</sup> Edition ,Carmine
2	Cadmium (as Cd), mg/l, Max	< 0.0005			0.0005	0.003	APHA, 22 <sup>nd</sup> Edition, AAS-GTA
3	Calcium (as Ca), mg/l, Max	44.8			1.60	75	IS-3025/40:1991, EDTA
4	Chloride (as Cl), mg/l, Max	48			2.00	250	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	< 0.03			0.03	0.05	IS 3025/42 : 1992 R : 2009, AAS-Flame
6	Fluoride (as F) mg/l, Max	0.54			0.02	1.0	APHA, 22 <sup>nd</sup> Edition, SPADNS
7	Free Residual Chlorine, mg/l, Min	0.06			0.02	0.2	APHA, 22 <sup>nd</sup> Edition, DPD
8	Iron (as Fe), mg/l, Max	< 0.06			0.06	0.3	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
9	Lead (as Pb), mg/l, Max	< 0.005			0.005	0.01	APHA, 22 <sup>nd</sup> Edition, AAS- GTA
10	Manganese (as Mn), mg/l, Max	< 0.02			0.02	0.1	IS-3025/59:2006,AAS-Flame
11	Nitrate (as NO <sub>3</sub> ), mg/l, Max	3.54			0.5	45	APHA, 22 <sup>nd</sup> Edition, UV-Spectrphotometric
12	Odour	Agreeable			Qualitative	Agreeable	IS 3025 /05:1983, R-2012, Qualitative
13	pH value	7.64			2.5	6.5 to 8.5	IS-3025/11:1983, R-1996, Electrometric
14	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max	< 0.002			0.002	0.001	APHA, 22 <sup>nd</sup> Edition,4-Amino Autipyrine
15	Selenium (as Se), mg/l, Max	< 0.002			0.002	0.01	APHA, 22 <sup>nd</sup> Edition, AAS- GTA
16	Sulphate (as SO <sub>4</sub> ) mg/l, Max	28			2.00	200	APHA, 22 <sup>nd</sup> Edition. Turbidity
17	Total Alkalinity (c <sub>a</sub> co <sub>3</sub> ),, mg/l, Max	144			4.00	200	IS-3025/23:1986,Titration
18	Total Arsenic (as As), mg/l, Max	< 0.002			0.002	0.01	IS 3025/ 37:1988 R : 2003, AAS-VGA
19	Total Chromium (as Cr), mg/l, Max	< 0.06			0.06	0.05	IS-3025/52:2003, AAS-Flame
20	Total Dissolved Solids, mg/l, Max	428			25.00	500	IS 3025 /16:1984 R : 2006, Gravimetric
21	Total Hardness (c <sub>a</sub> co <sub>3</sub> ), mg/l, Max	192			4.00	200	IS-3025/21:1983, R-2002, EDTA
22	Turbidity, NTU, Max	4			1.0	1	IS-3025/10:1984 R-1996, Nephelometric
23	Zinc (as Zn), mg/l, Max	0.03			0.01	5.0	IS 3025/ 49 : 1994, R : 2009, AAS-Flame

Analysed By

#### Checked By

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G.M (Chemist) Env. Lab, CMPDI(HQ) (Authorized Signatory)

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