

etc

Ref. UML/CPP/JSPCB/ES/19/005 /01

28<sup>th</sup> May, 2019

To  
The Member Secretary  
Jharkhand State Pollution Control Board  
T.A building, Ground floor  
HEC complex, P.O Dhurwa  
Ranchi - 834004

Subject: Environment Statement for M/S Usha Martin Limited (2X10 MW Captive Power Plant), Tatisilwai for the financial year 2018 - 19 in Form - V as required under the Environment (Protection) Act, 1986.

Dear Sir,

Please find enclosed herewith the Environment Statement for the financial year 2018-19 in Form - V as required under the Environment Protection Act, 1986.

Trust you will find this in order.

Thanking you,  
Yours Sincerely,  
For Usha Martin Limited  
(2X10MW Captive Power Plant)



Tanmoy Sinha  
(Head-CPP)

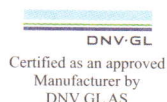
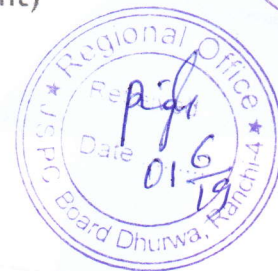
Real  
Badri  
31/5/19



Encl: Duly filled up Form - V (Environmental Statement)

Copy to:  
The Regional Officer  
Jharkhand State Pollution Control Board  
Tupudana Industrial Area  
Ranchi - 834003

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND, PIN-835103



07c

**[FORM – V]**

(See Rule 14)

**Environmental Statement for the financial year ending the 31<sup>st</sup> March 2019**

**PART – A**

(i)	Name & address of the owners / occupier of the industry / operation / process	Mr P.K.JAIN Occupier Usha Martin Wire Private Limited Tatisilwai, Ranchi- 835103
(ii)	Industry Category : Primary (STC code), Secondary (SIC code)	Secondary SIC code:
(iii)	Production capacity : Units	2 x 10 MW
(iv)	Year of establishment	2012
(v)	Date of last environmental statement submitted	25.09.2018 (Ref. UML/CPP/JSPCB/ES/18/009/09)

**PART – B**

**WATER & RAW MATERIAL CONSUMPTION**

i. Water consumption m<sup>3</sup>/d : **2018 –2019**

Process : 245.15 m<sup>3</sup>/d

Cooling : 58.58 m<sup>3</sup>/d

Domestic : 13.87 m<sup>3</sup>/d

Name of products	Process water consumption per unit of product output	
	During the previous financial year (1)	During the current financial year (2)
Electrical Power	0.00101 KL/unit	0.00100 KL/unit

**(1) RAW MATERIAL CONSUMPTION**

Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year
Metal & Alloy	Electrical power	NIL	NIL
Chemicals		0.000204 kg/unit	0.000179 kg/unit
Fuel (Coal)		1.08 kg/unit	1.13 kg/unit
Lubricant / Grease		0.00000639 Ltr/unit	0.00000467 Ltr/unit

**PART – C**

Pollutants discharges to environment / unit of output  
(Parameters as specified in the consent issued)

(i) Pollutants: Quantity of pollutants, concentration of pollutants, % of variation, discharge, mass in discharge (mass/volume) from prescribed with reasons.

**The reports of Stack monitoring, Water Analysis, Effluent analysis & Ambient Air Monitoring is enclosed as Annex-1**

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103

### PART - D

#### HAZARDOUS WASTES

(As specified under Hazardous waste / management & handling Rules 1989 & amended Rules)

Hazardous wastes	Total Quantity	
	During the previous financial year	During the current financial year 2018-19
(a) From process Spent/ waste Oil	Nil	NIL
(b) From pollution control facilities a) Waste oil b) Sludge	Nil	NIL

### PART - E

#### SOLID WASTES

Solid wastes	Total Quantity (MT)	
	During the previous financial year	During the current financial year
(a) From process, fly ash	50266.14 MT	70342.04 MT
(b) From pollution control facility - <b>ETP Sludge</b>	2.9 MT	2.6 MT
(c) (1) Quantity recycled or re-utilized within the unit	54923.24 MT	71204.77 MT**
(2) Sold	NIL	
(3) Disposal	Kept in Secured retention Tanks meant for the purpose	

**\*\* Unutilized from the previous year is also being utilized in FY 18-19**

### PART - F

Please specify the characteristics (in terms of composition & quantum) of Hazardous as well as solid wastes & indicate disposal practice adopted for both these categories of wastes.

A. Hazardous Waste: NO hazardous waste is generated

B. Solid Waste: Most of generated Fly ash has been utilized at our brick plant & rest is given to third party mainly Cement & brick manufacturers as per FOC basis

ETP sludge is disposed off to secure Land fill.

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND, PIN-835103

### **PART – G**

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

Installation of ETP/STP for treatment of waste water and reuse of treated waste water has positive impact on environment. Reuse of treated wastewater in fly ash brick making also considerably reduced the fresh water requirement.

Construction & implementation of rain water harvesting system augmented the ground water availability and also caters to water requirement during lean season.

Development of green belt by way of tree plantation within plant premises in phased manner contributes to minimize air pollution impacts and also improves the aesthetic beauty of the plant.

### **PART – H**

Additional measures / investment proposals for environmental protection including abatement of pollution , prevention of pollution.

1. ESP has been installed to limit the SPM
2. Bag filters has been installed
3. Online monitoring system has been installed.
4. Maintain ZERO discharge from CPP
5. Large numbers of new pant has planted in FY 18-19. More trees Plantation in coming years is proposed.
6. Water sprinkling system has been installed in different places in CPP (Mostly Covered the Coal & Ash handling area)

### **PART – I**

Any other particulars for improving the quality of the environment. –

1. More greenbelt development is being undertaken.
2. Very good housekeeping is being maintained inside the CPP
3. Ash is being fully utilized. 101 % in FY 18-19
4. Treated effluent is being used in brick plant

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAL, RANCHI  
JHARKHAND, PIN-835103

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

## STACK MONITORING

### Sample Details

### Client Details

Date & Date of Sampling	: 02.11.2018 & 03:20 PM	Client Name	: Usha Martin Limited (CPP DIV)
Sample ID	: CPP/ENV/NOV/140/03	Client Address	: Tatisilwai, Ranchi
Date of receipt	: 02.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Flue-Gas
Date of Report	: 16.11.2018	Sample Description	: Flue Gas Sample of ESP CPP Division
Unique Test Report No	: TC54041800000048F	Sampling method	: Grab Sampling

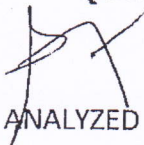
### TEST REPORT

Sl. No.	Description	Unit	Desirable limit	Result	Test Method
1	Location			ESP OUT-LET	
2	Area of Stack	(M <sup>2</sup> )		1.432	
3	Temperature of flue gas	(°C)		116.0	
4	Average Velocity	(m/s)		20.04	
6	Particulate matter	(mg/Nm <sup>3</sup> )	50.00	44.95	IS 11255, (part-1) 1985 reaffirmed 2003
7	Sulphur Dioxide	(mg/Nm <sup>3</sup> )	350.00	58.80	IS 11255, (part-2) 1985 reaffirmed 2003
8	Nitrogen Oxides	(mg/Nm <sup>3</sup> )	350.00	78.27	IS 11255, (part-7) 2005

Note: - General Emission standards as per Gazette of India, published by ministry of Environment & forests, 19<sup>th</sup> May, 1993 are for PM- 150 mg/Nm<sup>3</sup>.

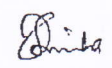
Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi

  
ANALYZED BY

  
TESTED BY

CPP (2 X 10 MW)  
USHAMARTIN LTD.  
TATISILWAI, RANCHI  
JHARKHAND, PIN-835103

  
CHECKED BY  
CPP (2 X 10 MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND PIN-835103

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

 E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051.683, 06513051.689 Fax: 06513051.409/410

## AMBIENT AIR MONITORING REPORT

### Sample Details

### Client Details

Date & Time of Sampling	: 09.11.2018 & 1:40 PM	Client Name	: Usha Martin limited (CPP)
Sample ID	: CPP/ENV/NOV/SLF/07	Client Address	: Tatisilwai, Ranchi
Date of Receipt	: 06.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Ambient Air
Unique Lab Report No	: TC540418000000059F	Duration of Sampling	: 24 hrs
Date of Report	: 16.11.2018	Sample Description	: Ambient air at SLF CPP Division


### TEST REPORT

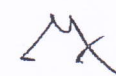
Sl.No.	Location	Parameter	Unit	Desirable limit	Results	Test Method
1	SLF AREA	Particulate Matter PM2.5	$\mu\text{g}/\text{M}^3$	60.00	48.24	SOP/UML/WT/02 Based on CPCB guideline Vol-I : 2012
2		Respirable Particulate Matter PM10	$\mu\text{g}/\text{M}^3$	100.00	65.85	IS:5182 (PT - 23) : 2006
3		Sulphur Dioxide	$\mu\text{g}/\text{M}^3$	80.00	22.22	IS:5182 (PT - 2) : 1999 Reaffirmed 2001
4		Nitrogen Dioxide	$\mu\text{g}/\text{M}^3$	80.00	17.25	IS:5182 (PT - 6) : 2006


**Norms: National Ambient Air Quality Standards as per CPCB vide notification dated 18<sup>th</sup> November, 2009 for industrial, Residential, Rural and other area as follows:**

Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi

  
ANALYZED BY

  
TESTED BY

  
CHECKED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISILWAI, RANCHI

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

## AMBIENT AIR MONITORING REPORT

### Sample Details

### Client Details

Date & Time of Sampling	: 05.11.2018 & 10:00 AM	Client Name	: Usha Martin limited (CPP)
Sample ID	: CPP/ENV/NOV/MNG/06	Client Address	: Tatisilwai, Ranchi
Date of Receipt	: 06.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Ambient Air
Unique Lab Report No	: TC540418000000058F	Duration of Sampling	: 24 hrs
Date of Report	: 16.11.2018	Sample Description	: Ambient air at Main Gate CPP Division

### TEST REPORT

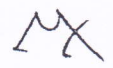
Sl.No.	Location	Parameter	Unit	Desirable limit	Results	Test Method
1	MAIN GATE	Particulate Matter PM2.5	µg/M <sup>3</sup>	60.00	39.44	SOP/UML/WT/02 Based on CPCB guideline Vol-I : 2012
2		Respirable Particulate Matter PM10	µg/M <sup>3</sup>	100.00	60.78	IS:5182 (PT – 23) : 2006
3		Sulphur Dioxide	µg/M <sup>3</sup>	80.00	21.58	IS:5182 (PT – 2) : 1999 Reaffirmed 2001
4		Nitrogen Dioxide	µg/M <sup>3</sup>	80.00	10.44	IS:5182 (PT – 6) : 2006


**Norms: National Ambient Air Quality Standards as per CPCB vide notification dated 18<sup>th</sup> November, 2009 for industrial, Residential, Rural and other area as follows:**

Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi

  
ANALYZED BY

  
CPP (2) TESTED BY  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI

  
CHECKED BY (M W)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

## AMBIENT AIR MONITORING REPORT

### Sample Details

### Client Details

Date & Time of Sampling	: 03.11.2018 & 4:05 PM	Client Name	: Usha Martin limited (CPP)
Sample ID	: CPP/ENV/NOV/MTG/05	Client Address	: Tatisilwai, Ranchi
Date of Receipt	: 04.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Ambient Air
Unique Lab Report No	: TC540418000000057F	Duration of Sampling	: 24 hrs
Date of Report	: 16.11.2018	Sample Description	: Ambient air at Material Gate CPP Division

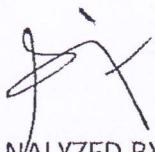
### TEST REPORT

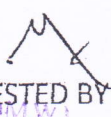
Sl.No.	Location	Parameter	Unit	Desirable limit	Results	Test Method
1	MATERIAL GATE	Particulate Matter PM2.5	$\mu\text{g}/\text{M}^3$	60.00	40.40	SOP/UML/WT/02 Based on CPCB guideline Vol-I : 2012
2		Respirable Particulate Matter PM10	$\mu\text{g}/\text{M}^3$	100.00	59.81	IS:5182 (PT – 23) : 2006
3		Sulphur Dioxide	$\mu\text{g}/\text{M}^3$	80.00	13.49	IS:5182 (PT – 2) : 1999 Reaffirmed 2001
4		Nitrogen Dioxide	$\mu\text{g}/\text{M}^3$	80.00	11.63	IS:5182 (PT – 6) : 2006


**Norms: National Ambient Air Quality Standards as per CPCB vide notification dated 18<sup>th</sup> November, 2009 for industrial, Residential, Rural and other area as follows:**

Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi

  
ANALYZED BY

  
TESTED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISILWAI, RANCHI  
JHARKHAND - 835103

  
CHECKED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISILWAI, RANCHI  
JHARKHAND - 835103

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

## AMBIENT AIR MONITORING REPORT

### Sample Details

### Client Details

Date & Time of Sampling	: 02.11.2018 & 2:30 PM	Client Name	: Usha Martin limited (CPP)
Sample ID	: CPP/ENV/NOV/WTP/04	Client Address	: Tatisilwai, Ranchi
Date of Receipt	: 03.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Ambient Air
Unique Lab Report No	: TC540418000000056F	Duration of Sampling	: 24 hrs
Date of Report	: 16.11.2018	Sample Description	: Ambient air at WTP CPP Division

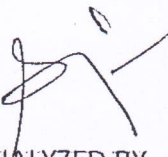
### TEST REPORT


Sl.No.	Location	Parameter	Unit	Desirable limit	Results	Test Method
1	WTP AREA	Particulate Matter PM2.5	µg/M <sup>3</sup>	60.00	44.96	SOP/UML/WT/02 Based on CPCB guideline Vol-I : 2012
2		Respirable Particulate Matter PM10	µg/M <sup>3</sup>	100.00	68.10	IS:5182 (PT – 23) : 2006
3		Sulphur Dioxide	µg/M <sup>3</sup>	80.00	14.42	IS:5182 (PT – 2) : 1999 Reaffirmed 2001
4		Nitrogen Dioxide	µg/M <sup>3</sup>	80.00	10.30	IS:5182 (PT – 6) : 2006

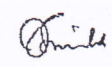
**Norms: National Ambient Air Quality Standards as per CPCB vide notification dated 18<sup>th</sup> November, 2009 for industrial, Residential, Rural and other area as follows:**

Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi

  
ANALYZED BY

  
TESTED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI

  
CHECKED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

**TEST REPORT OF GROUND WATER****Sample Details****Client Details**

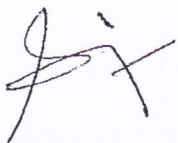

Date & Time of Sampling	: 17.11.2018 & 10:00 AM	Client Name	: Usha Martin Limited (CPP Div)
Sample ID	: NOV/RAW/ CPP/08	Client Address	: Tatisilwai , Ranchi
Date of Receipt	: 17.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Ground Water
Date of Report	: 24.11.2018	Sample Description	: Ground water- CPP Division

**TEST REPORT**

Sl.No.	Characteristics	Unit	Requirement (Desirable limit)	Results
1	Colour	Hazen	5.00	>10.00
2	Odour		AGREEABLE	AGREEABLE
3	Taste		AGREEABLE	AGREEABLE
4	Fluoride	Mg/ltr	1.00	0.085
5	Manganese	Mg/ltr	0.10	0.029
6	Mercury	Mg/ltr	0.001	<0.0005
7	Lead	Mg/ltr	0.01	<0.005
8	Zinc	Mg/ltr	5.00	<0.400

**Declaration:-**

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi.

  
ANALYZED BY  
TESTED BY  
CHECKED BY

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

**TEST REPORT OF TREATED ETP WATER****Sample Details****Client Details**

Date & Time of Sampling	: 17.11.2018 & 10:00 AM	Client Name	: Usha martin limited (CPP)
Sample ID	: NOV/EW/ CPP/10	Client Address	: Tatisilwai, Ranchi , 835103
Date of Receipt	: 17.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Treated ETP Water
Date of Report	: 24.11.2018	Sampling method	: Grab sampling
Unique Lab report No	: TC540418000000069F	Sample Description	: ETP Water at UML CPP Division


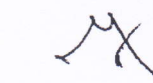
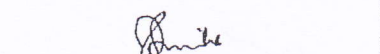
**TEST REPORT**

Sl.No.	Characteristics	Unit	Requirement (Desirable limit)	Results	Test Method
1	pH		5.50 – 9.00	7.80	APHA 22 <sup>nd</sup> Edition-4500 H <sup>+</sup>
2	Total Dissolved Solids	Mg/ltr		548.00	APHA 22 <sup>nd</sup> Edition-2540 C
3	Total Suspended solids	Mg/ltr	100.00	23.20	APHA 22 <sup>nd</sup> Edition-2540 D
4	Dissolved oxygen	Mg/ltr		6.50	IS:3025, (part-38) 2014
5	Oil & Grease	Mg/ltr	10.00	2.00	IS:3025, (part-39) 2014

\*\* General standards for discharge of environmental pollutants vide Ministry of Env. And Forests notification dated 19<sup>th</sup> May, 1993 and amendment dated 31<sup>st</sup> December, 1993.

**Declaration:-**

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi.

  
ANALYZED BY  
TESTED BY  
CHECKED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

## TEST REPORT OF TREATED ETP WATER

### Sample Details

### Client Details

Date of Sampling	: 17.11.2018 & 10:00 AM	Client Name	: Usha martin limited (CPP)
Sample ID	: NOV/EW/ CPP/10	Client Address	: Tatisilwai, Ranchi , 835103
Date of Receipt	: 17.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Treated ETP Water
Date of Report	: 24.11.2018	Sample Description	: ETP Water at UML CPP Division

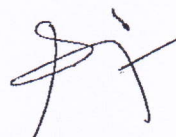
### TEST REPORT

Sl.No.	Characteristics	Unit	Requirement (Desirable limit)	Results
1	Lead	Mg/ltr	0.10	<0.10
2	Zinc	Mg/ltr	5.00	0.66
3	Phosphate	Mg/ltr	5.00	0.52
4	Chloride	Mg/ltr	-	205.65
5	BOD, 3 days at 27 °C	Mg/ltr	30.00	7.00
6	COD	Mg/ltr	250.00	25.00
7	Iron	Mg/ltr	3.00	0.88
8	Manganese	Mg/ltr	2.00	0.16


\*\* General standards for discharge of environmental pollutants vide Ministry of Env. And Forests notification dated 19<sup>th</sup> May, 1993 and amendment dated 31<sup>st</sup> December, 1993.

#### Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced exact in full and without the written permission of environmental laboratory, CPP, UML, Ranchi.

  
ANALYZED BY

  
TESTED BY

  
CHECKED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND, PIN 835103

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

 E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

## TEST REPORT OF DRINKING WATER

### Sample Details

### Client Details

Date & Time of Sampling	: 17.11.2018 & 10:00 AM	Client Name	: Usha Martin Limited (CPP Div)
Sample ID	: NOV/DR/ CPP/09	Client Address	: Tatisilwai, Ranchi
Date of Receipt	: 17.11.2018	State	: Jharkhand
Sample Drawn by	: Lab Representative	Type of Sample	: Drinking Water
Date of Report	: 24.11.2018	Sampling Method	: Grab Sampling
Unique Lab Report No	: TC540418000000068F	Sample Description	: Drinking water-CPP Division

### TEST REPORT

Sl.No.	Characteristics	Unit	Requirement (Desirable limit)	Results	Test Method
1	pH		6.50 to 8.50	7.60	APHA 22 <sup>nd</sup> Edition-4500 H <sup>+</sup>
2	Total Dissolved Solids	Mg/ltr	500.00	40.00	APHA 22 <sup>nd</sup> Edition-2540 C
3	Turbidity	NTU	1.00	<0.10	APHA 22 <sup>nd</sup> Edition-2130 B
4	Alkalinity	Mg/ltr	200.00	24.00	IS:3025, (part-23) 2014
5	Acidity	Mg/ltr		4.00	IS:3025, (part-22) 2014
6	Total hardness (as CaCO <sub>3</sub> )	Mg/ltr	300.00	16.00	IS:3025, (part-21) 2014
7	Calcium (as CaCO <sub>3</sub> )	Mg/ltr	75.00	10.00	IS:3025, (part-40) 2014
8	Magnesium (as CaCO <sub>3</sub> )	Mg/ltr	30.00	6.00	APHA 22 <sup>nd</sup> Edition -3500mg B
9	Chloride	Mg/ltr	250.00	15.00	IS:3025, (part-32) 2014
10	Sulphate	Mg/ltr	200.00	6.53	APHA 22 <sup>nd</sup> Edition-4500 So <sub>4</sub> 2
11	Residual free chlorine	Mg/ltr	0.20	<0.10	IS:3025, (part-26) 2014
12	Iron	Mg/ltr	0.30	<0.075	IS:3025, (part-53) 2014
13	Nitrate	Mg/ltr	45.00	8.34	IS:3025, (part-39) 2014
14	Nitrite	Mg/ltr		0.34	APHA 22 <sup>nd</sup> Edition-4500No <sub>2</sub> B
15	Silica	Mg/ltr		0.45	IS:3025, (part-35) 2014
16	Temperature	°C		22.4	IS:3025, (part-9) 2006

\*\* IS: 10500(2012): Drinking Water Specification

### Declaration:-

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi.

ANALYZED BY

TESTED BY

CHECKED BY

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND, PIN-835103

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND, PIN-835103

ENVIRONMENTAL LABORATORY, 2X10 MW CPP, TATISILWAI, RANCHI (JHARKHAND) – 835103

E-Mail: [tanmay\\_roy@ushamartin.co.in](mailto:tanmay_roy@ushamartin.co.in), [cpp\\_wtprnc@ushamartin.co.in](mailto:cpp_wtprnc@ushamartin.co.in)

OFFICE NO: 06513051 683, 06513051 689 Fax: 06513051 409/410

**TEST REPORT OF DRINKING WATER**

**Sample Details**

**Client Details**

Date & Time of Sampling : 17.11.2018 & 10:00 AM	Client Name : Usha Martin Limited (CPP Div)
Sample ID : NOV/DR/ CPP/09	Client Address : Tatisilwai , Ranchi
Date of Receipt : 17.11.2018	State : Jharkhand
Sample Drawn by : Lab Representative	Type of Sample : Drinking Water
Date of Report : 24.11.2018	Sample Description : Drinking water- CPP Division


**TEST REPORT**


Sl.No.	Characteristics	Unit	Requirement (Desirable limit)	Results
1	Colour	Hazen	5.00	<5.00
2	Odour		AGREEABLE	AGREEABLE
3	Taste		AGREEABLE	AGREEABLE
4	Fluoride	Mg/ltr	1.00	0.015
5	Manganese	Mg/ltr	0.10	0.019
6	Mercury	Mg/ltr	0.001	<0.0005
7	Lead	Mg/ltr	0.01	<0.005
8	Zinc	Mg/ltr	5.00	<0.400

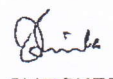
\*\* IS: 10500(2012): Drinking Water Specification

**Declaration:-**

1. Results reported are valid at the time of testing and under the stated testing condition.
2. Result in the report refers to only the sample submitted by the client.
3. This report shall will be reproduced expect in full and without the written permission of environmental laboratory, CPP, UML, Ranchi.

  
ANALYZED BY

  
CPP (2 X 10MW)  
USHAMARTIN LTD TESTED BY  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103

  
CHECKED BY  
CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 : 2008

Registration No. :- CCPL/QMS/F1011

Email : bharatic303@gmail.com

Head Office :- Deepanjali Inclave, 1st Floor, Office No.-51, Main Road, Hinoo, Ranchi (Jh)

**CONSULT :-** Building-Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D View, Material Testing, Quality Control, Stability, Lifts & Hoist, Lifting Machines, Chains, Ropes And Lifting, Pressure Vessel, Chartered Engineer

Pan No. - AANFB6770B  
GST No. - 20AANFB6770B1ZT  
Memo No. - CIF Ranchi - 551-12-05-2017

S. Parida, V.K. Sinha  
Competent Person

Mob: 9431768713  
6201186550

ANNEXURE-I

REF NO.-BIC/USHA/PPP/DUST/01/2018

DATE- 17/07/2018

## AMBIENT AIR QUALITY RESULTS

(ALL VALUES IN MICROGRAMS/ CUBIC METER)

(DUST & AIR)

1. Name of Factory : M/S Usha Martin Limited (CPP)
2. Address of the Factory Name : Tatisilwai, Dist-Ranchi, Jharkhand.

Sl NO.	LOCATION	Result In $\mu\text{g}/\text{m}^3$					Remarks
		Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur dioxide (SO <sub>2</sub> )	Nitrogen Oxides (NO <sub>x</sub> )	Carbon Monoxide (CO)	
1.	CPP-Main Gate	73	25	12	26	2068	O.K
2.	Residential Quarter	78	23	12	25	2311	O.K
3.	Near SLF	75	21	11	28	2611	O.K

Norms: National Ambient Air Quality Standards (NAAQS) for industrial, Residential, Rural, and other area as per MOEF, New Delhi vide notification dated 18<sup>th</sup> November, 2009 for 24 hours averages are as follows:

Industrial Area: PM (PM<sub>10</sub>)-  $100\mu\text{g}/\text{m}^3$  ; PM(PM<sub>2.5</sub>)- $60\mu\text{g}/\text{m}^3$  ;

NO<sub>2</sub> -  $80\mu\text{g}/\text{m}^3$  ; SO<sub>2</sub> -  $80\mu\text{g}/\text{m}^3$  ; CO- $4000\mu\text{g}/\text{m}^3$

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103

*S. Parida*  
Competent Person  
Bharat Industrial Consultant  
Bharat Industrial Consultant  
Competent Person  
Memo No. 637 Dated 10/05/2018  
M.-9431768713, 6201186550



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 : 2008

Registration No. :- CCPL/QMS/ET/011

Email : bharatic303@gmail.com

Head Office :- Deepanjali Inclave, 1st Floor, Office No.-51, Main Road, Hinoo, Ranchi (Jh)

**CONSULT :-** Building-Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D View, Material Testing, Quality Control, Stability, Lifts & Hoist, Lifting Machines, Chains, Ropes And Lifting, Pressure Vessel, Chartered Engineer

Pan No. :- AANFB6770B

GST No. :- 20AANFB6770B1Z1

Memo No. :- OIF Ranchi - 551 - 12-25-2017

S.Parida, V.K. Sinha  
Competent Person

Mob: 9431768713  
6201186350

REF NO: - BIC/USHA/PPP/BA/11/2018

DATE: 18/07/2018

1. Name of Factory : M/S Usha Martin Limited (PPP)
2. Address of the Factory Name : Tatisilwai Dist-Ranchi, Jharkhand.
3. Date of Sampling : 17.07.2018
4. Type of Sample : Bottom Ash

Sl.No	Parameter	*Standards (Concentration Limits)	Results Total Metal Concentration (mg/Kg)
1.	Manganese (as Mn)	-	229.00
2.	Cadmium (as Cd)	≤50 mg/kg	5.69
3.	Iron (as Fe)	-	100.52
4.	Zinc (as Zn)	≤20,000 mg/kg	125.00
5.	Nickel (as Ni)	≤5,000 mg/kg	12.00
6.	Lead (as Pb)	≤5,000 mg/kg	29.00
7.	Total Chromium (as Cr)	≤5,000 mg/kg	27.00
8.	Copper (as Cu)	≤5,000 mg/kg	32.00
9.	Mercury (as Hg)	≤50 mg/kg	BDL
10.	Arsenic (as As)	≤50 mg/kg	BDL

BDL : Below Detection Limit for <0.05 mg/kg for As <0.5 mg/kg

Ministry of Environment & Forest notification, New Delhi, The Hazardous Wastes Management and Handling Rules, 1989 as amended, on 24 September, 2008 (Schedule-2)

Director

Subas Kumar

Bharat Industrial Consultant  
M. 9334002535, 7633855938  
Director

Bharat Industrial Consultant

PPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 : 2008

Registration No. - CCPL/QMS/F1011

Email : bharatic303@gmail.com

Head Office :-Deeprajali Inclave, 1st Floor, Office No. 51, Main Road, Hinoo, Ranchi (Jh)

**CONSULT :-** Building-Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D View, Material Testing, Quality Control, Stability, Lifts & Hoist, Lifting Machines, Chains, Ropes And Lifting Pressure Vessel, Chartered Engineer

Pan No - AANF867709

GST No - 20AANF867709-ET

Memo No - CIF Ranchi - 881 - 12-03-2017

S.Panda, V.K. Sinha  
Competent Person

Mob: 9431768713

6201186530

REF NO: - BIC/USHA/PPP/WA/10/2018

DATE: 18/07/2018

## RESULTS OF WATER ANALYSIS

Project : Usha Martin Limited

Date of sampling : 17.07.2018

Location : Ground water

Sl.No	Characteristics	Requirement (Desirable Limits)	Results			
			GW-5	GW-6	GW-7	GW-8
1.	Colour, Hazen units, Max.	5	<5.00	<5.00	<5.00	<5.00
2.	Odour	Agreeable	Agree.	Agree.	Agree.	Agree.
3.	Taste	Agreeable	Agree.	Agree.	Agree.	Agree.
4.	Turbidity, NTU, Max.	5	<0.10	<0.10	<0.10	<0.10
5.	pH	6.5 to 8.5	7.80	7.10	6.92	7.19
6.	Total Hardness (as CaCO <sub>3</sub> ), mg/l, Max.	300	80.00	180.00	112.00	142.00
7.	Iron (as Fe), mg/l, Max.	0.3	0.30	0.27	0.22	0.29
8.	Chloride (as Cl), mg/l, Max.	250	49.25	66.81	40.66	32.55
9.	Residual Free Chlorine, mg/l, Min.	0.2	Not Detected	Not Detected	Not Detected	Not Detected
10.	Fluoride (as F) mg/L, Max.	1.0	0.21	0.18	0.44	0.40
11.	Dissolved Solids mg/l, Max.	500	280.00	360.00	210.00	258.00
12.	Calcium (as Ca), mg/l, Max.	75	60.00	55.00	40.00	38.00
13.	Magnesium (as Mg), mg/L, Max.	30	20.00	42.00	28.00	28.00
14.	Copper (Cu), mg/l, Max.	0.05	<0.01	<0.01	<0.01	<0.01
15.	Manganese (as Mn), mg/l, Max.	0.1	0.40	0.32	0.39	0.12
16.	Sulphate (as SO <sub>4</sub> ), mg/l, Max.	200	22.56	28.00	49.6	21.66
17.	Nitrate (as NO <sub>3</sub> ), mg/l, Max.	45	1.5	2.55	2.19	1.69
18.	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH), mg/l, Max.	0.001	<0.001	<0.001	<0.001	<0.001
19.	Mercury (as Hg), mg/l, Max.	0.001	<0.0005	<0.0005	<0.0005	<0.0005
20.	Cadmium (as Cd), mg/l, Max.	0.01	<0.005	<0.005	<0.005	<0.005
21.	Selenium (as Se), mg/l, Max.	0.01	<0.005	<0.005	<0.005	<0.005
22.	Arsenic (as As), mg/l, Max.	0.05	<0.03	<0.03	<0.03	<0.03
23.	Cyanide (as CN), mg/l, Max.	0.05	<0.01	<0.01	<0.01	<0.01
24.	Lead (as Pb), mg/l, Max.	0.05	<0.05	<0.05	<0.05	<0.05
25.	Zinc (as Zn), mg/l, Max.	5.0	0.22	0.29	0.88	0.066
26.	Chromium (as Cr6 +), mg/l, Max.	0.05	<0.01	<0.01	<0.01	<0.01
27.	Mineral oil mg/l, Max.	0.01	<0.01	<0.01	<0.01	<0.01
28.	Alkalinity (as CaCO <sub>3</sub> ) mg/l, Max.	200	48.00	96.00	58.00	110.00
29.	Aluminium (as Al) mg/l, Max.	0.03	<0.01	<0.01	<0.01	<0.01
30.	Boron, mg/l, Max.	1.0	< 0.2	< 0.2	< 0.2	< 0.2
31.	Coliform organisms, MPN/100ml	0	Nil	Nil	Nil	Nil

\*IS: 10500 (2012): Drinking water specification

1. GW5 = CPP near material gate

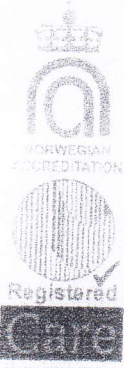
2. GW6 = Tatisilwai Village New tool Room

3. GW7 = Ajad Basti

4. GW8 = Aara Gate

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND, PIN-835103

Director  
Subas Kumar  
Bharat Industrial Consultant  
M-9334002535, 7633855938



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 : 2008

Registration No. :- CCPL/QMS/F1011

Email : bharatic303@gmail.com

Head Office :- Deepanjali Inclave, 1st Floor, Office No.-51, Main Road, Hincos, Ranchi (Jh)

**CONSULT :-** Building-Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D Flow, Material Testing, Quality Control, Stability, Lims & Hoist, Lifting Machines, Crane, Pumps And Lifting, Pressure Vessel, Chartered Engineer

PAN No. SAUCBR70B  
GST No. - 28AAAF68770B1ZT  
M/S No. 637 Dated 10/05/2018

S. Parida, V.K. Sinha  
Competent Person  
Mob. - 9431768713  
6201186550

## ANNEXURE-V

REF NO.-BIC/USHA/CPP/SAR/ 05/2018

DATE- 17/07/2018

## GROUND WATER ANALYSIS REPORT

1. Name of Factory : M/S Usha Martin Limited (CPP)  
2. Address of the Factory Name : Tatisilwai Dist-Ranchi, Jharkhand.
- Date of Sampling : 16.07.2018  
Type of Sample : Ground Water near Ash handling Area

Sl.No	Parameter	Standards (Concentration Limits)	Results Total Metal Concentration (mg/Kg)
1.	pH	6.5 - 8.5	7.7
2.	Manganese (as Mn) mg/l	0.1 - 0.3 mg/l	0.074
3.	Cadmium (as Cd)	0.05 mg/l	<0.001
4.	Mercury (as Hg)	0.001 mg/l	<0.0005
5.	Cyanide(As CN)	0.05 mg/l	<0.01
6.	Zinc(As Zn)	5.0 - 15.0 mg/l	6.89
7.	Lead (as Pb)	0.05 mg/l	<0.05
8.	Total Chromium (as Cr6+)	0.05 mg/l	<0.05
9.	Copper (as Cu)	0.05 mg/l	<0.025

Ministry of Environment & Forest notification, New Delhi, the Hazardous Wastes Management and Handling Rules, 1989 as amended, on 24 September, 2008 (Schedule-2)

*S. Parida*  
Competent Person  
Bharat Industrial Consultant

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103

Bharat Industrial Consultant  
Competent Person  
Memo No. 637 Dated 10/05/2018  
M.-9431768713, 6201186550



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 : 2008

Registration No. :- CCPL/QMS/1001

Email : bharatic303@gmail.com

Head Office :- Deopur, Jai Inclave, 1st Floor, Office No.-51, Main Road, Hira, Ranchi (Jh)

**CONSULT :-** Building, Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D View, Material Testing, Quality Control, Stability, Lifts & Hoist Lifting Machines, Chains, Ropes And Lifting, Pressure Vessel, Chartered Engineer.

Phone :- ANFB67708  
 Cell No :- 9431768713  
 Memo No :- GJ Ranchi, 561 12-05-2017

S. Panda, V.K. Sinha  
 Competent Person  
 Mob: 9431768713  
 6201186550

REF NO: - BIC/USHA/PPP/SR/02/2018

ANNEXURE-II

DATE: 17/07/2018

Codes..... CIE S 008/E: 2001/ISO 8995-1:2002(E)  
 As per Is code 1944-5 (1981)

1. Name of Factory : M/S USHA MARTIN LIMITED (2x10MW CPP)
2. Address of the Factory : Tatisilwai, Dist-Ranchi, Jharkhand.
3. **READING OF SOUND METER**

SL	LOCTION	READING AT DAY/SOUND METER(DB)			READING AT NIGHT/ SOUND METER(DB)			REMARK
		MAX	MIN	Log Avg	MAX	MIN	Log Avg	
1.	Near Laboratory	70.1	57.6	65.9	59.3	47.3	53.6	GOOD
2.	Near CPP Main Gate	69.0	60.3	66.1	60.5	50.1	57.7	GOOD
3.	Near CPP Main Gate-2	64.5	53.1	61.9	53.5	49.9	51.1	GOOD
4.	Near Coal Handling Plant	69.7	62.1	67.5	62.2	60.4	61.1	GOOD
5.	Near Turbine Area	83.1	79.2	81.1	81	78	79.5	GOOD
6.	Near Boiler Area	78.2	73.6	75.4	75.8	72.4	74.1	GOOD

Note:- Sound Range should be between 20DB to 85 DB

*S. Panda*  
 Competent Person  
 Bharat Industrial Consultant

Bharat Industrial Consultant  
 Competent Person  
 Memo No. 637 Dated 10/05/2018  
 M-9431768713 6201186550

CPP (2 X 10MW)  
 USHAMARTIN LTD.  
 TATISIL WAI, RANCHI  
 JHARKHAND. PIN-835103



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 - 2008

Registration No. :- CCPL/QMS/11011

Email : bharatic103@gmail.com

Head Office - Deepanjali Inclave, 1st Floor, Office No.-51, Main Road, Hiran, Ranchi (Jh)

CONSULT :- Building-Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D View, Material Testing, Quality Control, Staircase, Lifts & Hoist, Lifting Machines, Chains, Ropes and Lifting, Pressure Vessel, Chartered Engineer

Part No. - AANFB67708  
GST No. - 23AANFB67708137  
Memo No. - OIF Ranchi - 581 13-05-2018

S. Parida, V.K. Sarda  
Competent Person  
Mob: 9431768713, 8201186650

REF NO.-BIC/USHA/PPP/DUST/01/2018

ANNEXURE-I

DATE- 17/07/2018

## AMBIENT AIR QUALITY RESULTS

(ALL VALUES IN MICROGRAMS/ CUBIC METER)  
(DUST & AIR)

- Name of Factory : M/S Usha Martin Limited (CPP)
- Address of the Factory Name : Tatisilwai, Dist-Ranchi, Jharkhand.

SL NO.	LOCATION	Result in $\mu\text{g}/\text{m}^3$					Remarks
		Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulphur dioxide (SO <sub>2</sub> )	Nitrogen Oxides (NO <sub>x</sub> )	Carbon Monoxide (CO)	
1.	CPP-Main Gate	73	25	12	26	2068	
2.	Residential Quarter	78	23	12	25	2311	O.K
3.	Near SLF	75	21	11	28	2611	O.K
							O.K

Norms: National Ambient Air Quality Standards (NAAQS) for industrial, Residential, Rural, and other area as per MOEF, New Delhi vide notification dated 18<sup>th</sup> November, 2009 for 24 hours averages are as follows:

Industrial Area: PM (PM<sub>10</sub>)- 100 $\mu\text{g}/\text{m}^3$  ; PM(PM<sub>2.5</sub>)-60 $\mu\text{g}/\text{m}^3$  ;

NO<sub>2</sub> - 80 $\mu\text{g}/\text{m}^3$  ; SO<sub>2</sub> - 80 $\mu\text{g}/\text{m}^3$ ; CO-4000  $\mu\text{g}/\text{m}^3$

CPP (2 X 10MW)  
USHAMARTIN LTD.  
TATISIL WAI, RANCHI  
JHARKHAND. PIN-835103

S. Parida  
Competent Person  
Bharat Industrial Consultant  
Bharat Industrial Consultant  
Competent Person  
Memo No. 637 Dated 10/05/2018  
M.-9431768713, 8201186650



# Bharat Industrial Consultant

Govt. Valuer & Licence Engineer

ISO 9001 : 2008

Registration No. :- CCPL/QMS/F1011

Email : bharatic303@gmail.com

Head Office :- Deepanjali Inclave, 1st Floor, Office No.-51, Main Road, Hindo, Ranchi (Jh)

**CONSULT :-** Building-Architectural Drawing, Structural Design, Estimate, Building Valuation work and 3D View, Material Testing, Quality Control, Stability, Lifts & Hoist, Lifting Machines, Chains, Ropes And Lifting, Pressure Vessel, Chartered Engineer.

Pan No. :- AANFB8779D

GST No. :- 20AANFB8779D1ZT

Memo No. :- OIF Ranchi - 561 12-06-2017

S.Parida, V.K. Sinha  
Competent Person

Mob: 9431768713  
6201186550

REF NO: - BIC/USHA/PPP/WA/08/2018

DATE: 18/07/2018

## RESULTS OF WATER ANALYSIS

Project : Usha Martin Limited  
Date of sampling : 17.07.2018  
Location : Surface water

Sl.No.	Characteristics	Results
1.	Electrical Conductivity, $\mu\text{S/cm}$	569.00
2.	pH	7.49
3.	Dissolved Oxygen (as $\text{O}_2$ ) mg/l	5.12
4.	BOD, 3 days at $27^\circ\text{C}$ , mg/l	4.00
5.	Free Ammonia (as N), mg/l	<0.01
6.	Sodium Absorption (SAR)	0.99
7.	Boron, mg/l,	<1.00
8.	Iron (as Fe), mg/l	<0.10
9.	Chloride (as Cl), mg/l	65.12
10.	Fluoride (as F) mg/l	0.75
11.	Nitrate Nitrogen (as N), mg/l	2.02
12.	Mercury (as Hg), mg/l	<0.0005
13.	Arsenic (as As), mg/l	<0.03
14.	Cyanide (as CN), mg/l	<0.01
15.	Copper (Cu), mg/	<0.025
16.	Manganese (as Mn), mg/l	<0.061
17.	Cadmium (as Cd), mg/l	<0.01
18.	Lead (as Pb), mg/l	<0.05
19.	Zinc (as Zn), mg/l	<0.005
20.	Chromium (as Cr), mg/l	<0.05
21.	Aluminium (as Al) mg/l	<0.02
22.	Coliform organisms, MPN/100ml	730.0

### CPCB Water Quality Criteria For Surface Water As Per Use

Sl.no.	Parameters	Class A	Class B	Class C	Class D	Class E
1.	pH	6.5-8.5	6.5-8.5	6.0-9.0	6.5-8.5	6.5-8.5
2.	Dissolved Oxygen (as $\text{O}_2$ ) mg/l	6	5	4	4	-
3.	BOD, 3 days at $27^\circ\text{C}$ , mg/l	2	3	3	-	-
4.	Coliform organisms, MPN/100ml	50	500	5000	-	-
5.	Free Ammonia (as N), mg/l	-	-	-	-	-
6.	Electrical Conductivity, $\mu\text{S/cm}$	-	-	-	1.2	-
7.	Sodium Absorption (SAR)	-	-	-	-	2250
8.	Boron, mg/l,	-	-	-	-	26
						2

Class A : Drinking water source without conventional treatment but after disinfection  
Class B : Outdoor bathing (Organized)  
Class C : Drinking water source without conventional treatment and after disinfection  
Class D : Propagation of wild life and fisheries  
Class E : Irrigation, industrial cooling, and controlled waste disposal  
Below E : Not meeting A,B,C,D & E Criteria

Director

Subas Kumar

Bharat Industrial Consultant

M. - 9334002535, 7633855939

Bharat Industrial Consultant

CPP (2 X 10MW)  
USHAMARTIN LTD,  
TATISIL WAI, RANCHI  
JHARKHAND, PIN-835103