

An ISO 9001-2015 & OHSAS 45001:2018 Certified Company, Empanelled with OCCL, ORSAC and SPCB of Govt. of Odisha Accredited by NABET, QCI for EIA Studies as 'A' Category Consultant Organization. Empanelled with PCCF(Wildlife) &CWLW,Odisha Enlisted in Construction Industry Development Council (CIDC) established by the Planning Commission (Govt. of India) MoEF&CC, Govt. of India, Recognised Environment Laboratory under Environment (Protection) Act, 1986.

#### Report No. - CEMC/ASL/17122024/A

**Issued Date-17.12.2024** 

#### AMBIENT AIR QUALITY MONITORING TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description: Ambient AirDate of Monitoring: 27.11.2024Date of Receiving: 29.11.2024Date of Analysis: 29.11.2024

Sample Collected by : Mr. Rabindranath Das.

#### **ANALYSIS RESULT**

| Sl.                    | LOCATION                                                           | MONITORING REPORT             |                                |                             |                      |                       |                                |  |
|------------------------|--------------------------------------------------------------------|-------------------------------|--------------------------------|-----------------------------|----------------------|-----------------------|--------------------------------|--|
| No.                    | LOCATION                                                           | $\frac{PM_{10}}{(\mu g/m^3)}$ | $\frac{PM_{2.5}}{(\mu g/m^3)}$ | $SO_2$ (µg/m <sup>3</sup> ) | $NO_x$ $(\mu g/m^3)$ | CO (mg/m³)            | $NH_3$ $(\mu g/m^3)$           |  |
| 1                      | At the boundary near the water harvesting pond (East Direction)    | 74.8                          | 38.2                           | 17.4                        | 22.2                 | 0.52                  | <20                            |  |
| 2                      | At the Boundary near ESP (South Direction)                         | 67.4                          | 35.2                           | 15.6                        | 19.4                 | 0.39                  | <20                            |  |
| 3                      | At the Boundary near<br>Coal Fines Stock yard<br>(North Direction) | 66.2                          | 34.2                           | 10.2                        | 16.2                 | 0.29                  | <20                            |  |
| 4                      | Near Ball mill,Iron ore fines stock yard                           | 76.6                          | 39.9                           | 16.4                        | 21.8                 | 0.41                  | <20                            |  |
| NAA                    | NAAQ Standard-2009                                                 |                               | 60                             | 80                          | 80                   | 4.0                   | 400                            |  |
| Methods of<br>Analysis |                                                                    | IS: 5182<br>(Part-23)         | IS: 5182<br>(Part-<br>24,2019) | IS: 5182<br>(Part-2)        | IS: 5182<br>(Part-6) | IS: 5182<br>(Part-10) | IS: 5182<br>(Part-<br>25,2019) |  |

### Notes:

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Sample Collected by : Mr. Rabindranath Das.

| Sl.                    |                          | MONITORING REPORT    |                           |                           |                                                |                       |                           |  |  |  |
|------------------------|--------------------------|----------------------|---------------------------|---------------------------|------------------------------------------------|-----------------------|---------------------------|--|--|--|
| No.                    | LOCATION                 | О3                   | Pb                        | Ni                        | As                                             | Benzene               | BaP                       |  |  |  |
| 110.                   |                          | $(\mu g/m3)$         | (µg/m3)                   | (ng/m3)                   | (ng/m3)                                        | $(\mu g/m3)$          | (ng/m3)                   |  |  |  |
| 1                      | At the boundary near the |                      |                           |                           |                                                |                       |                           |  |  |  |
|                        | water harvesting pond    | <10                  | < 0.05                    | <3.2                      | < 0.1                                          | <5                    | <1                        |  |  |  |
|                        | (East Direction)         |                      |                           |                           |                                                |                       |                           |  |  |  |
| 2                      | At the Boundary near     | <10                  | < 0.05                    | <3.2                      | < 0.1                                          | <5                    | <1                        |  |  |  |
|                        | ESP (South Direction)    | 10                   | <0.03                     | \J.2                      | <b>\0.1</b>                                    | \3                    | <b>\1</b>                 |  |  |  |
| 3                      | At the Boundary near     |                      |                           |                           |                                                |                       |                           |  |  |  |
|                        | Coal Fines Stock yard    | <10                  | < 0.05                    | <3.2                      | < 0.1                                          | <5                    | <1                        |  |  |  |
|                        | (North Direction)        |                      |                           |                           |                                                |                       |                           |  |  |  |
| 4                      | Near Ball mill, Iron ore | <10                  | < 0.05                    | <3.2                      | < 0.1                                          | <5                    | <1                        |  |  |  |
|                        | fines stock yard         | <b>\10</b>           | \0.03                     | <b>\\3.2</b>              | <b>~</b> 0.1                                   | <3                    | <u></u>                   |  |  |  |
| NAA                    | Q Standard-2009          | 100                  | 1.0                       | 20                        | 6                                              | 5                     | 1                         |  |  |  |
| Methods of<br>Analysis |                          | IS: 5182<br>(Part-9) | IS: 5182<br>(Part-<br>22) | IS: 5182<br>(Part-<br>26) | As per<br>CPCB<br>method<br>followed<br>by AAS | IS: 5182<br>(Part-11) | IS: 5182<br>(Part-<br>12) |  |  |  |

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Report No. - CEMC/ASL/17122024/F

Issued Date-17.12.2024

#### **FUGITIVE EMISSION MONITORING TEST REPORT**

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description : Fugitive Emission

Date of Monitoring : 27.11.2024
Date of Receiving : 29.11.2024
Date of Analysis : 29.11.2024

Sample Collected by : Mr. Rabindranath Das.

#### **ANALYSIS RESULT**

| Sl.   |                                                                   | RESU         | JLT         |
|-------|-------------------------------------------------------------------|--------------|-------------|
| No.   | LOCATION                                                          | RSPM (μg/m³) | SPM (μg/m³) |
| 1     | Proportioning System (Ash & Coke Fines Bunker)                    | 504          | 1060        |
| 2     | Raw Material Transfer point of Mixture (Mixture Building)         | 452          | 1102        |
| 3     | Ball Mill (Cool Grinding)                                         | 388          | 1170        |
| 4     | Ball Mill (Flux & Coke Grinding)                                  | 492          | 1114        |
| 5     | Finished Product Transfer points and plant de-dusting system      | 398          | 998         |
| 6     | Travelling Grate & Rotary Kiln                                    | 394          | 994         |
| Stand | lard as per Environment (Protection Act)3 <sup>rd</sup> Amendment |              | 2000*       |
| Rules | 2-2012 by MoEF & CC. at 10 m distance from the source             |              |             |

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Report No. - CEMC/ASL/17122024/N

Issued Date-17.12.2024

#### AMBIENT NOISE MONITORING TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description : Noise Monitoring

Date of Monitoring : 27.11.2024

Sample Collected by : Mr. Rabindranath Das.

#### **ANALYSIS RESULT**

| Sl.<br>No. | Location                                                  | Noise Level<br>In Day Time<br>dB(A) | Noise Level<br>In Night Time<br>dB(A) |
|------------|-----------------------------------------------------------|-------------------------------------|---------------------------------------|
| 01         | Ball Mill (Cool Grinding)                                 | 84.2                                | 79.8                                  |
| 02         | Raw Material Transfer point of Mixture (Mixture Building) | 79.9                                | 72.9                                  |

#### NATIONAL STANDARD NOISE LEVEL

| Area | Category of Area/Zone | Permissible Limit in dB (A) |            |  |
|------|-----------------------|-----------------------------|------------|--|
| Code |                       | Day Time                    | Night Time |  |
| A    | Industrial Area       | 75                          | 70         |  |
| В    | Commercial Area       | 65                          | 55         |  |
| С    | Residential Area      | 55                          | 45         |  |
| D    | Silence Zone          | 50                          | 40         |  |

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Report No. - CEMC/ASL/17122024/St

Issued Date-17.12.2024

### STACK EMISSION MONITORING TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description : Stack Monitoring

Date of Monitoring : 27.11.2024

Sample Collected by : Mr. Rabindranath Das.

Stack Height : 30m

#### **ANALYSIS RESULT**

| Sl. | Location of Sampling        | Flue Gas   | Concentration of Particulate Matter (PM) in mg/Nm <sup>3</sup> |
|-----|-----------------------------|------------|----------------------------------------------------------------|
| No. | 1 8                         | Temp. in K | Result                                                         |
| 01  | ESP                         | 393        | 44                                                             |
|     | Permissible Limit as per CT | 50         |                                                                |

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Report No. - CEMC/ASL/17122024/DW

Issued Date-17.12.2024

### **DRINKING WATER TEST REPORT**

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description: Ground WaterDate of Monitoring: 27.11.2024Date of Receiving: 29.11.2024Date of Analysis: 29.11.2024

Sample Collected by : Mr. Rabindranath Das.
Sample Location : Canteen(RO Water)

#### ANALYSIS RESULT

| Sl.<br>No | Parameter                           | Unit  | Desired Limit of<br>drinking water<br>(BIS:10500:2012) | Permissible Limit<br>of drinking water<br>(BIS:10500:2012) | Result |
|-----------|-------------------------------------|-------|--------------------------------------------------------|------------------------------------------------------------|--------|
| 1         | Colour                              | Hazen | 5                                                      | 15                                                         | <5     |
| 2         | Odour                               | -     | Agreeable                                              | Agreeable                                                  | AL     |
| 3         | Taste                               | -     | Agreeable                                              | -                                                          | AL     |
| 4         | Turbidity                           | NTU   | 1                                                      | 5                                                          | <1     |
| 5         | pH Value @ 25°C                     | -     | 6.5-8.5                                                | No Relaxation                                              | 6.7    |
| 6         | Total Dissolved Solid               | mg/l  | 500                                                    | 2000                                                       | 68     |
| 7         | Alkalinity as CaCO <sub>3</sub>     | mg/l  | 200                                                    | 600                                                        | 48     |
| 8         | Total Hardness as CaCO <sub>3</sub> | mg/l  | 200                                                    | 600                                                        | 50     |
| 9         | Iron as Fe                          | mg/l  | 0.3                                                    | No Relaxation                                              | 0.1    |
| 10        | Nitrate as NO <sub>3</sub> -N       | mg/l  | 45                                                     | No Relaxation                                              | 0.6    |
| 11        | Sulphate as SO <sub>4</sub>         | mg/l  | 200                                                    | 400                                                        | 7.2    |
| 12        | Fluoride as F                       | mg/l  | 1.0                                                    | 1.5                                                        | < 0.05 |
| 13        | Calcium as Ca                       | mg/l  | 75                                                     | 200                                                        | 13.6   |
| 14        | Chloride as Cl <sup>-</sup>         | mg/l  | 250                                                    | 1000                                                       | 11.2   |

N.B: AL - Agreeable

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Report No. - CEMC/ASL/17122024/SW

Issued Date-17.12.2024

### **SURFACE WATER TEST REPORT**

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description:Surface WaterDate of Monitoring:27.11.2024Date of Receiving:29.11.2024Date of Analysis:29.11.2024

Sample Collected by : Mr. Rabindranath Das.

Sample Location : Reservoir

#### **ANALYSIS RESULT**

| Sl.<br>No | Parameter                                  | Unit  | GSR 422E Standards | Result |
|-----------|--------------------------------------------|-------|--------------------|--------|
| 1         | Colour                                     | Hazen |                    | 5      |
| 2         | Odour                                      | _     |                    | U/O    |
| 3         | pH Value @ 25°C                            | _     | 5.5-9.0            | 6.1    |
| 4         | Total Dissolved Solid                      | mg/l  | 2100               | 172    |
| 5         | Iron as Fe                                 | mg/l  | 3.0                | 0.4    |
| 6         | Sulphate as SO <sub>4</sub>                | mg/l  | 1000               | 16.2   |
| 7         | Nitrate as NO <sub>3</sub> <sup>-</sup> -N | mg/l  | 50                 | 15.8   |
| 8         | Boron as B                                 | mg/l  | 2.0                | 0.14   |
| 9         | BOD for 3 days @ 27°C                      | mg/l  | 30                 | 16.2   |
| 10        | COD                                        | mg/l  | 250                | 50     |

N.B: U/O- Un-objectionable

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Report No. - CEMC/ASL/17122024/WW

Issued Date-17.12.2024

#### WASTE WATER TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description: Waste WaterDate of Monitoring: 27.11.2024Date of Receiving: 29.11.2024Date of Analysis: 29.11.2024

Sample Collected by : Mr. Rabindranath Das.

Sample Location : STP Outlet

### **ANALYSIS RESULT**

| Sl.<br>No. | Parameter               | Unit | Effluent<br>Discharge<br>Standard | Testing Method             | Result |
|------------|-------------------------|------|-----------------------------------|----------------------------|--------|
| 1.         | pH Value @ 25°C         |      | 6.5-9.0                           | APHA 4500 H <sup>+</sup> B | 6.78   |
| 2.         | Total Suspended Solids  | mg/l | <20                               | APHA 2540 D                | 34.2   |
| 3.         | B.O.D for 3 days @ 27°C | mg/l | <10                               | APHA 5210 B                | 9.0    |
| 4.         | COD                     | mg/l | < 50                              | APHA 5220 C                | 40     |
| 5.         | Oil & Grease            | mg/l |                                   | APHA 5520 B                | 3.0    |

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Report No. - CEMC/ASL/17122024/BW

Issued Date-17.12.2024

### WATER TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description : Bore Well Water

Date of Monitoring : 27.11.2024
Date of Receiving : 29.11.2024
Date of Analysis : 29.11.2024

Sample Collected by : Mr. Rabindranath Das.

Sample Location : Bore Well

#### **GROUND WATER TEST REPORT**

| Slr. |                                                                |       |         |         |         | IS105               | 00:2012              |
|------|----------------------------------------------------------------|-------|---------|---------|---------|---------------------|----------------------|
| No.  | Parameters                                                     | Unit  | BW1     | BW2     | BW3     | Acceptable<br>Limit | Permissible<br>Limit |
| 1    | Colour                                                         | Hazen | <05     | <05     | <05     | 5                   | 15                   |
| 2    | Odour                                                          |       | AL      | AL      | AL      | AL                  | AL                   |
| 3    | Taste                                                          |       | AL      | AL      | AL      | AL                  | AL                   |
| 4    | Turbidity                                                      | NTU   | <1.0    | <1.0    | <1.0    | 1                   | 5                    |
| 5    | pH Value @<br>25°C                                             | mg/l  | 7.14    | 7.22    | 7.1     | 6.5-8.5             | No Relaxation        |
| 6    | Total Hardness<br>(as CaCO <sub>3</sub> )                      | mg/l  | 172     | 162     | 170     | 200                 | 600                  |
| 7    | Iron (as Fe)                                                   | mg/l  | 0.2     | 0.25    | 0.22    | 0.3                 | No Relaxation        |
| 8    | Chloride (as Cl)                                               | mg/l  | 39.9    | 41.9    | 35.9    | 250                 | 1000                 |
| 9    | Residual, free<br>Chlorine                                     | mg/l  | ND      | ND      | ND      | 0.2                 | 1.0                  |
| 10   | Total Dissolved<br>Solids                                      | mg/l  | 260     | 252     | 266     | 500                 | 2000                 |
| 11   | Calcium (as Ca)                                                | mg/l  |         |         |         | 75                  | 200                  |
| 12   | Magnesium (as Mg)                                              | mg/l  |         |         |         | 30                  | 100                  |
| 13   | Copper (as Cu)                                                 | mg/l  | < 0.03  | < 0.03  | < 0.03  | 0.05                | 1.5                  |
| 14   | Manganese (as Mn)                                              | mg/l  | < 0.05  | < 0.05  | < 0.05  | 0.1                 | 0.3                  |
| 15   | Sulphate (as SO <sub>4</sub> )                                 | mg/l  | 16.6    | 15.2    | 14.8    | 200                 | 400                  |
| 16   | Nitrate (as NO <sub>3</sub> )                                  | mg/l  | 6.2     | 5.8     | 7.0     | 45                  | No Relaxation        |
| 17   | Fluoride (as F)                                                | mg/l  | < 0.05  | 0.1     | 0.14    | 1.0                 | 1.5                  |
| 18   | Phenolic<br>Compounds (as<br>C <sub>6</sub> H <sub>5</sub> OH) | mg/l  | <0.001  | <0.001  | <0.001  | 0.001               | 0.002                |
| 19   | Mercury (as Hg)                                                | mg/l  | < 0.001 | < 0.001 | < 0.001 | 0.001               | No Relaxation        |
| 20   | Cadmium (as Cd)                                                | mg/l  | <0.003  | <0.003  | <0.003  | 0.003               | No Relaxation        |
| 21   | Selenium (as Se)                                               | mg/l  | < 0.001 | < 0.001 | < 0.001 | 0.01                | No Relaxation        |
| 22   | Arsenic (as As)                                                | mg/l  | < 0.001 | < 0.001 | < 0.001 | 0.01                | 0.05                 |

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Laboratory At: Plot No. 800/1274, Johal, Pahal, Bhubaneswar-752101, Odisha, India, ,Mobile: 7752014842



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| 23 | Cyanide (as CN)                             | mg/l      | ND     | ND     | ND     | 0.05                    | No Relaxation |
|----|---------------------------------------------|-----------|--------|--------|--------|-------------------------|---------------|
| 24 | Lead (as Pb)                                | mg/l      | < 0.01 | < 0.01 | < 0.01 | 0.01                    | No Relaxation |
| 25 | Zinc (as Zn)                                | mg/l      | < 0.05 | < 0.05 | < 0.05 | 5                       | 15            |
| 26 | Chromium (as<br>Cr)                         | mg/l      | < 0.05 | < 0.05 | < 0.05 | 0.05                    | No Relaxation |
| 27 | Mineral Oil                                 | mg/l      | < 0.05 | < 0.05 | < 0.05 | 0.5                     | No Relaxation |
| 28 | Total Alkalinity<br>(as CaCO <sub>3</sub> ) | mg/l      | 140    | 148    | 124    | 200                     | 600           |
| 29 | Aluminium (as<br>Al)                        | mg/l      | < 0.01 | < 0.01 | < 0.01 | 0.03                    | 0.2           |
| 30 | Boron (as B)                                | mg/l      | < 0.2  | < 0.2  | < 0.2  | 0.5                     | 1.0           |
| 31 | Total Coliform                              | MPN/100ml | Absent | Absent | Absent | Absent in 100 mL Sample |               |
| 32 | Faecal Coliform                             | MPN/100ml | Absent | Absent | Absent | Absent in 100 mL Sample |               |

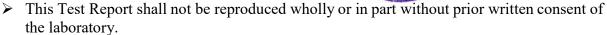
**N.B:** AL – Agreeable

\*END OF REPORT\*

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Notes:

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Report No. - CEMC/ASL/17122024/SW

**Issued Date-17.12.2024** 

#### WASTE TEST REPORT

Name of Company : Ardent Steel Ltd.
Sample Description : Waste material
Date of Monitoring : 27.11.2024
Date of Receiving : 29.11.2024
Date of Analysis : 29.11.2024

Sample Collected by : Mr. B.K.Samantaray

Sampling material : Used Oil

#### **ANALYSIS RESULT**

| Sl.<br>No | Parameter                             | Unit of measurement | As per HWMR-2016<br>Schedule-V,Part-A,Max | Used Oil |
|-----------|---------------------------------------|---------------------|-------------------------------------------|----------|
| 1         | Polychlorinated biphenyls (PCBs)      | ppm                 | <2                                        | ND       |
| 2         | Cadmium+Chromium+Nickel (as Cd+Cr+Ni) | ppm                 | 500                                       | 1.5      |
| 3         | Lead (as Pb)                          | ppm                 | 100                                       | 0.36     |
| 4         | Polyaromatic Hydrocarbon              | %                   | 6                                         | ND       |
| 5         | Arsenic (as As)                       | ppm                 | 5.0                                       | < 0.001  |

<sup>\*</sup>ND-Not Detected, ppm-parts per million

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<sup>\*</sup>The test parameter is within the standard limit



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#### Report No. - CEMC/ASL/17122024/WW

Issued Date-17.12.2024

### WATER TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description: Waste WaterDate of Monitoring: 27.11.2024Date of Receiving: 29.11.2024Date of Analysis: 29.11.2024

Sample Collected by : Mr. Rabindranath Das.

Sample Location : ETP OUTLET

#### **ANALYSIS RESULT**

| Sl. No. | Parameter               | Unit | Effluent Discharge<br>Standard (a) | Testing Method             | Result |
|---------|-------------------------|------|------------------------------------|----------------------------|--------|
| 1.      | pH Value @ 25°C         | -    | 6.5-9.0                            | APHA 4500 H <sup>+</sup> B | 7.26   |
| 2.      | Total Suspended Solids  | mg/l | <100                               | APHA 2540 D                | 27.4   |
| 3.      | B.O.D for 3 days @ 27°C | mg/l | <30                                | IS 3025(Part-44)           | 18.2   |
| 4.      | C.O.D                   | mg/l | <250                               | APHA 5220 B                | 60     |
| 5.      | Oil & grease            | mg/l | <10                                | APHA 5520 B                | <1     |

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#### Report No. - CEMC/ASL/17122024/WW

**Issued Date-17.12.2024** 

### WATER TEST REPORT

Name of Company : Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description : Waste Water
Date of Monitoring : 27.11.2024
Date of Receiving : 29.11.2024
Date of Analysis : 29.11.2024

Sample Collected by : Mr. Rabindranath Das.

Sample Location : STP INLET

#### **ANALYSIS RESULT**

| Sl. No. | Parameter               | Unit      | Testing Method             | Result |
|---------|-------------------------|-----------|----------------------------|--------|
| 1.      | pH Value @ 25°C         | -         | APHA 4500 H <sup>+</sup> B | 7.1    |
| 2.      | Total Suspended Solids  | mg/l      | APHA 2540 D                | 112    |
| 3.      | B.O.D for 3 days @ 27°C | mg/l      | IS 3025(Part-44)           | 140    |
| 4.      | Faecal Coliform         | MPN/100ml | IS 1622                    | >1600  |

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#### **WATER TEST REPORT**

Name of Company Ardent Steel Ltd., Keonjhar, Odisha.

Sample Description Waste Water Date of Monitoring 27.11.2024 Date of Receiving 29.11.2024 Date of Analysis 29.11.2024

Sample Collected by Mr. Rabindranath Das.

Sample Location **STP OUTLET** 

#### ANALYSIS RESULT

| Sl. No. | Parameter               | Unit      | Effluent<br>Discharge<br>Standard (a) | Testing Method             | Rresult |
|---------|-------------------------|-----------|---------------------------------------|----------------------------|---------|
| 1.      | pH Value @ 25°C         | -         | 6.5-9.0                               | APHA 4500 H <sup>+</sup> B | 7.17    |
| 2.      | Total Suspended Solids  | mg/l      | <100                                  | APHA 2540 D                | 21.8    |
| 3.      | B.O.D for 3 days @ 27°C | mg/l      | <30                                   | IS 3025(Part-44)           | 20      |
| 4.      | Faecal Coliform         | MPN/100ml | <1000                                 | IS 1622                    | 21      |

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