

**Monthly Performance Report
(HWT-NG100-MPR-13-R0)**

**August 2017
(From 01/08/2017 to 31/08/2017)**

**100 TPD Municipal Solid Waste (MSW) Facility
Calangute, North Goa**

Prepared By
**Hindustan Waste Treatment Pvt. Ltd.
(HWT)**

Submitted To
**Department of Science & Technology (DS&T)
&
Goa State Infrastructural Development
Corporation Limited (GSIDC)**

Table – 1
Summary of Overall Average Results for August 2017
(As compared to Schedule – 7: Performance Standards, Volume – I of RFP)

| Sr. No. | Parameter | Performance Standard As per Schedule – 7 | Actual Performance at Plant (Monthly Average) |
|---------|---|--|--|
| 1. | Number of fractions of recyclables sorted per day from the input mixed waste | Minimum 10 numbers of fractions shall be sorted daily from the input dry waste as received in the facility. The list of fractions are as follows: <ol style="list-style-type: none"> 1. PET Bottles 2. Mixed Plastic Articles 3. Newspapers / other Paper Material 4. Cardboard 5. Styrofoam & Thermocol 6. Coconut Shells 7. Clothes 8. Rubber Articles 9. Metal Articles & Cans 10. E-waste Articles and any Hazardous Waste | 13 numbers of fractions are being sorted daily from the input dry waste as received in the facility. The list of fractions are as follows: <ol style="list-style-type: none"> 1. Glass 2. Metal Articles & Cans 3. Tetrapacks 4. Paper / Cardboard 5. Plastic Film 6. Hard Plastics 7. PET Bottles 8. Styrofoam & Thermocol 9. Cloth / Rags / Textile 10. Jute bags 11. Leather / Rubber / Rexine 12. Coconut Shells 13. E-waste Articles and any Hazardous Waste |
| 2. | Quantum of reject/residues to be sent to the landfill after processing. No organic fraction shall be disposed in the landfill. | Maximum 10% of inert of the total input waste as received in the facility (in TPD). | Input waste to the Plant is 107.55 TPD . Quantum of Inert is 5.95 TPD which is < 10% of the Total Input Waste as received in the Facility. No Organic Waste has been disposed in the Sanitary Landfill Facility. |
| 3. | Electricity generation in the Plant | Minimum electricity to be generated in the plant shall be 0.40 MW per 100 tons of input wet biodegradable waste as received in the Facility (in TPD). | Electricity generation is 0.54 MW/100 tons of Input Biodegradable Waste as received in the Facility (in TPD). |
| | | | |

| Sr. No. | Parameter | Performance Standard As per Schedule – 7 | Actual Performance at Plant (Monthly Average) | | | | | | | | | | |
|---------|---|---|---|----|------|-----|--------|-----|---------|-----|--------|-----|-----------|
| 4. | Biogas Flaring System | The Biogas Flaring System shall strictly be used only in case of emergency and not as a routine practice. | Biogas is being flared strictly, only under emergency and not as a routine practice. The average running time of Biogas Flaring System is 5.38 hours/day . | | | | | | | | | | |
| 5. | Discharge of treated effluent conforming to regulatory norms | Effluent Treatment Plant shall be operated under all conditions. | Effluent Treatment Plant is being operated continuously and is meeting all statutory conditions. The Treated Effluent Characteristics are as follows: <table border="1" data-bbox="1032 684 1403 898"> <tbody> <tr> <td>pH</td> <td>7.07</td> </tr> <tr> <td>BOD</td> <td>7 mg/l</td> </tr> <tr> <td>COD</td> <td>72 mg/l</td> </tr> <tr> <td>TSS</td> <td>8 mg/l</td> </tr> <tr> <td>TDS</td> <td>1737 mg/l</td> </tr> </tbody> </table> | pH | 7.07 | BOD | 7 mg/l | COD | 72 mg/l | TSS | 8 mg/l | TDS | 1737 mg/l |
| pH | 7.07 | | | | | | | | | | | | |
| BOD | 7 mg/l | | | | | | | | | | | | |
| COD | 72 mg/l | | | | | | | | | | | | |
| TSS | 8 mg/l | | | | | | | | | | | | |
| TDS | 1737 mg/l | | | | | | | | | | | | |
| 6. | General Housekeeping, hygienic conditions, cleanliness, safety norms, adequate manpower, treatment methodology for plant operation & maintenance and storage conditions in the plant. | Minimum housekeeping, safety norms and cleanliness conditions shall be maintained at all times as per the Bid Document requirement. | <ul style="list-style-type: none"> • High standard of Housekeeping, Cleanliness and Safety are being maintained at all times at the Plant. • Adequate manpower has been deployed in all shifts. • Also, the treatment methodology is being followed properly and proper storage conditions have been maintained in the Plant. | | | | | | | | | | |

| # | Plant Performance Data: August 2017 | | |
|---------|-------------------------------------|--|-----------|
| Sr. No. | Content | Month | Signature |
| 1 | Input Waste Composition | From 01.08.2017 To 31.08.2017 | |
| 2 | Recyclables | | |
| 3 | Electricity Generation | | |
| 4 | Biogas Flare | | |
| 5 | Effluent Treatment Plant | | |
| 6 | Inert | | |
| 7 | Housekeeping | | |

1 INPUT WASTE COMPOSITION:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average | | |
|-----------------------------------|---|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|--------------|---------------|---------------|---------------|--------------|----------------|---------------|----------------|
| A Input Waste: | | | | | | | | | | | | | | | | | | | | |
| 1 | Dry Waste | TPD | 18.130 | 8.870 | 12.080 | 13.080 | 11.400 | 6.370 | 10.830 | 11.54 | 9.64% | 12.860 | 7.550 | 8.820 | 9.490 | 6.730 | 3.760 | 10.710 | 8.56 | 8.11% |
| 2 | Wet Waste | TPD | 25.270 | 29.990 | 24.850 | 31.420 | 25.910 | 24.980 | 34.580 | 28.14 | 23.52% | 32.300 | 15.410 | 12.720 | 17.060 | 15.130 | 81.390 | 14.710 | 26.96 | 25.54% |
| 3 | Mixed Waste | TPD | 82.570 | 70.170 | 76.500 | 74.110 | 75.990 | 72.260 | 73.000 | 74.94 | 62.63% | 74.750 | 67.150 | 77.200 | 75.570 | 84.490 | 11.420 | 88.780 | 68.48 | 64.87% |
| 4 | Mulched Tree Waste | TPD | 2.880 | 9.660 | 0.620 | 7.650 | 1.560 | 8.300 | 4.540 | 5.03 | 4.20% | 1.190 | 1.990 | 4.240 | 1.510 | 0.000 | 0.670 | 1.360 | 1.57 | 1.48% |
| 5 | Total.....1+2+3+4 | TPD | 128.85 | 118.69 | 114.05 | 126.26 | 114.86 | 111.91 | 122.95 | 119.65 | 100.00% | 121.10 | 92.10 | 102.98 | 103.63 | 106.35 | 97.24 | 115.56 | 105.57 | 100.00% |
| B Input Waste Composition: | | | | | | | | | | | | | | | | | | | | |
| 1 | Organic / Bio degradable Fraction | 65.00% | 58.88 | 59.74 | 56.90 | 62.99 | 58.51 | 54.46 | 65.97 | 59.64 | 49.84% | 63.32 | 42.61 | 45.76 | 49.40 | 51.29 | 86.07 | 52.89 | 55.91 | 52.96% |
| 2 | Inorganic / Non-recyclable Fraction (RDF) | | 41.83 | 40.35 | 34.53 | 42.45 | 35.93 | 37.38 | 34.50 | 38.14 | 31.88% | 35.30 | 33.58 | 37.65 | 38.68 | 33.49 | -8.89 | 40.18 | 30.00 | 28.42% |
| 3 | Recyclables | 14.00% | 20.10 | 12.78 | 16.41 | 14.53 | 14.04 | 14.91 | 15.96 | 15.53 | 12.98% | 15.82 | 10.32 | 13.12 | 10.77 | 15.21 | 13.76 | 15.51 | 13.50 | 12.79% |
| | Glass | 0.05-0.1% | 0.09 | 0.11 | 0.07 | 0.11 | 0.08 | 0.07 | 0.07 | 0.09 | 0.07% | 0.06 | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 | 0.12 | 0.08 | 0.07% |
| | Metal | 0.3-0.5% | 0.49 | 0.38 | 0.51 | 0.63 | 0.53 | 0.43 | 0.54 | 0.50 | 0.42% | 0.45 | 0.30 | 0.41 | 0.34 | 0.53 | 0.48 | 0.47 | 0.43 | 0.40% |
| | Paper / Cardboard / Tetrapack | 1.5-3.0% | 3.71 | 1.99 | 2.94 | 2.08 | 2.44 | 2.63 | 3.30 | 2.73 | 2.28% | 2.91 | 1.75 | 2.16 | 1.76 | 2.12 | 2.76 | 2.11 | 2.22 | 2.11% |
| | Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics | 3.5- 7.5% | 8.41 | 4.32 | 6.33 | 5.93 | 5.56 | 5.38 | 6.02 | 5.99 | 5.01% | 6.35 | 3.56 | 5.23 | 3.78 | 7.25 | 5.64 | 6.07 | 5.41 | 5.13% |
| | Thermocoal / Styrofoam | 0.05-0.1% | 0.08 | 0.11 | 0.06 | 0.08 | 0.10 | 0.11 | 0.07 | 0.09 | 0.07% | 0.12 | 0.06 | 0.10 | 0.08 | 0.05 | 0.06 | 0.09 | 0.08 | 0.08% |
| | Cloth / Rags / Textiles | 1.0-2.5% | 2.71 | 2.58 | 2.83 | 2.07 | 2.73 | 2.07 | 2.36 | 2.48 | 2.07% | 2.35 | 2.11 | 1.71 | 1.68 | 2.28 | 2.25 | 2.88 | 2.18 | 2.06% |
| | Rubber Items | 0.25-0.5% | 0.32 | 0.45 | 0.47 | 0.57 | 0.54 | 0.32 | 0.59 | 0.47 | 0.39% | 0.48 | 0.23 | 0.41 | 0.29 | 0.40 | 0.37 | 0.49 | 0.38 | 0.36% |
| | Coconut | 1.5-3.5% | 4.29 | 2.85 | 3.20 | 3.06 | 2.06 | 3.89 | 3.00 | 3.19 | 2.67% | 3.10 | 2.25 | 3.02 | 2.76 | 2.50 | 2.13 | 3.28 | 2.72 | 2.58% |
| 4 | Inert | 10.00% | 8.04 | 5.82 | 6.20 | 6.29 | 6.39 | 5.16 | 6.52 | 6.34 | 5.30% | 6.66 | 5.58 | 6.45 | 4.79 | 6.36 | 6.30 | 6.98 | 6.16 | 5.83% |
| 5 | Mulched Tree Waste | 11.00% | 2.88 | 9.66 | 0.62 | 7.65 | 1.56 | 8.30 | 4.54 | | | 1.19 | 1.99 | 4.24 | 1.51 | 0.00 | 0.67 | 1.36 | | |
| | Total.....1+2+3+4+5 | 100.00% | | | | | | | | | 100.00% | | | | | | | | | 100.00% |

2 RECYCLABLES:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average | |
|-----------------------|---------------------------|------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|--|
| A Recyclables: | | | | | | | | | | | | | | | | | | | |
| 1 | Glass | Kg | 90 | 107 | 68 | 114 | 80 | 67 | 74 | 86 | 61 | 74 | 72 | 73 | 74 | 78 | 116 | 78 | |
| 2 | Metal | Kg | 490 | 380 | 513 | 631 | 528 | 425 | 541 | 501 | 448 | 304 | 412 | 342 | 532 | 476 | 474 | 427 | |
| 3 | Tetrapack | Kg | 219 | 90 | 144 | 87 | 105 | 108 | 105 | 123 | 148 | 65 | 104 | 99 | 106 | 116 | 112 | 107 | |
| 4 | Paper / Cardboard | Kg | 3,492 | 1,904 | 2,798 | 1,996 | 2,330 | 2,522 | 3,190 | 2,605 | 2,758 | 1,685 | 2,059 | 1,663 | 2,011 | 2,646 | 2,003 | 2,118 | |
| | Total.....3+4 | Kg | 3,711 | 1,994 | 2,942 | 2,083 | 2,435 | 2,630 | 3,295 | 2,727 | 2,906 | 1,750 | 2,163 | 1,762 | 2,117 | 2,762 | 2,115 | 2,225 | |
| 5 | Plastic Films | Kg | 6,967 | 3,685 | 5,646 | 5,032 | 4,770 | 4,592 | 4,910 | 5,086 | 5,375 | 2,965 | 4,274 | 3,223 | 6,020 | 4,534 | 5,284 | 4,525 | |
| 6 | Hard Plastic | Kg | 690 | 298 | 354 | 368 | 434 | 296 | 512 | 422 | 565 | 302 | 492 | 303 | 529 | 558 | 425 | 453 | |
| 7 | Pet | Kg | 757 | 337 | 329 | 534 | 356 | 495 | 602 | 487 | 406 | 288 | 466 | 257 | 704 | 547 | 358 | 432 | |
| | Total.....5+6+7 | Kg | 8,414 | 4,320 | 6,329 | 5,934 | 5,560 | 5,383 | 6,024 | 5,995 | 6,346 | 3,555 | 5,232 | 3,783 | 7,253 | 5,639 | 6,067 | 5,411 | |
| 8 | Thermocal | Kg | 77 | 107 | 57 | 76 | 103 | 112 | 74 | 87 | 121 | 55 | 103 | 83 | 53 | 58 | 92 | 81 | |
| 9 | Cloth / Rags / Textile | Kg | 2,056 | 1,978 | 2,093 | 1,458 | 2,053 | 1,660 | 1,799 | 1,871 | 1,804 | 1,554 | 1,395 | 1,214 | 1,700 | 1,903 | 2,408 | 1,711 | |
| 10 | Jute Bags | Kg | 649 | 598 | 735 | 613 | 681 | 410 | 562 | 607 | 545 | 555 | 315 | 465 | 576 | 344 | 469 | 467 | |
| | Total.....9+10 | Kg | 2,705 | 2,576 | 2,828 | 2,071 | 2,734 | 2,070 | 2,361 | 2,478 | 2,349 | 2,109 | 1,710 | 1,679 | 2,276 | 2,247 | 2,877 | 2,178 | |
| 11 | Leather / Rubber / Rexine | Kg | 322 | 451 | 468 | 568 | 540 | 325 | 590 | 466 | 484 | 230 | 412 | 290 | 404 | 370 | 485 | 382 | |
| 12 | Coconut | Kg | 4,291 | 2,849 | 3,205 | 3,055 | 2,056 | 3,894 | 3,000 | 3,193 | 3,100 | 2,247 | 3,017 | 2,757 | 2,499 | 2,130 | 3,282 | 2,719 | |
| 13 | Total | Kg | 20,100 | 12,784 | 16,410 | 14,532 | 14,036 | 14,906 | 15,959 | 15,532 | 15,815 | 10,324 | 13,121 | 10,769 | 15,208 | 13,760 | 15,508 | 13,501 | |
| | | TPD | 20.10 | 12.78 | 16.41 | 14.53 | 14.04 | 14.91 | 15.96 | 15.53 | 15.82 | 10.32 | 13.12 | 10.77 | 15.21 | 13.76 | 15.51 | 13.50 | |

3 ELECTRICITY GENERATION:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average | |
|--------------------------|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--|
| A Biogas Gensets: | | | | | | | | | | | | | | | | | | | |
| 1 | Biogas Genset-I: Running Time | hr | 12.97 | 11.95 | 15.34 | 12.74 | 23.00 | 21.28 | 21.26 | 16.93 | 23.84 | 16.55 | 15.77 | 12.76 | 18.85 | 18.12 | 19.99 | 17.98 | |
| 2 | Biogas Genset-I: Energy Generation | kW.hr | 2,054 | 1,916 | 2,255 | 2,085 | 3,301 | 3,012 | 3,459 | 2,583 | 3,411 | 2,312 | 2,271 | 1,832 | 2,919 | 2,583 | 2,880 | 2,601 | |
| 3 | Biogas Genset-II: Running Time | hr | 23.85 | 12.90 | 10.86 | 23.20 | 16.66 | 15.77 | 16.98 | 17.17 | 17.21 | 15.18 | 14.67 | 23.64 | 11.91 | 23.13 | 14.74 | 17.21 | |
| 4 | Biogas Genset-II: Energy Generation | kW.hr | 3,218 | 1,891 | 1,566 | 2,947 | 2,694 | 2,241 | 2,812 | 2,481 | 2,620 | 2,425 | 2,035 | 3,417 | 1,780 | 3,398 | 1,792 | 2,495 | |
| 5 | Total.....2+4 | kW.hr | 5,272 | 3,807 | 3,821 | 5,032 | 5,995 | 5,253 | 6,271 | 5,064 | 6,031 | 4,737 | 4,306 | 5,249 | 4,699 | 5,981 | 4,672 | 5,096 | |

| Sr. No. | Description | Unit | 1-Jul | 2-Jul | 3-Jul | 4-Jul | 5-Jul | 6-Jul | 7-Jul | Weekly Average | 8-Jul | 9-Jul | 10-Jul | 11-Jul | 12-Jul | 13-Jul | 14-Jul | Weekly Average |
|----------|--|------|-------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|--------|--------|--------|--------|--------|----------------|
| B | Electricity Generation: | | | | | | | | | | | | | | | | | |
| 1 | <u>As per Tender:</u> Minimum electricity to be generated in the plant shall be 0.4 MW per per 100 tons of Input Biodegradable Waste as received in the Facility. | | | | | | | | | | | | | | | | | |
| 2 | Biodegradable Waste.....1.B4 | Tons | 58.88 | 59.74 | 56.90 | 62.99 | 58.51 | 54.46 | 65.97 | 59.64 | 63.32 | 42.61 | 45.76 | 49.40 | 51.29 | 86.07 | 52.89 | 55.91 |
| 3 | Electricity Generation required as per Tender.....0.4 x 1000 x B2/100 | kWH | 236 | 239 | 228 | 240 | 234 | 218 | 240 | 233 | 240 | 170 | 183 | 198 | 205 | 240 | 212 | 207 |
| 4 | Electricity generated..... (A2/A1) + (A4/A3) | kWH | 293 | 307 | 291 | 291 | 305 | 284 | 328 | 300 | 295 | 299 | 283 | 288 | 304 | 289 | 266 | 289 |

4 BIOGAS FLARE:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average |
|---------|----------------|--------|-------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|--------|--------|--------|--------|--------|----------------|
| 2 | Operation Time | hr/day | 4.60 | 3.72 | 6.81 | 3.26 | 5.50 | 4.99 | 3.81 | 4.67 | 6.95 | 5.94 | 6.85 | 5.89 | 6.02 | 5.04 | 4.39 | 5.87 |

5 EFFLUENT TREATMENT PLANT:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average |
|----------|----------------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|--------|--------|--------|--------|--------|----------------|
| A | Raw Effluent Quality: | | | | | | | | | | | | | | | | | |
| 1 | Flow | m ³ /day | 64.30 | 55.62 | 52.84 | 68.39 | 49.69 | 45.01 | 54.44 | 55.76 | 57.63 | 56.46 | 51.41 | 43.38 | 40.45 | 59.66 | 49.56 | 51.22 |
| 2 | pH | --- | 7.75 | 7.32 | 7.88 | 7.85 | 7.17 | 6.13 | 7.06 | 7.31 | 7.84 | 6.83 | 6.09 | 6.47 | 7.09 | 7.07 | 6.61 | 6.86 |
| 3 | Biochemical Oxygen Demand (BOD5) | mg/l | 1,661 | 2,109 | 1,782 | 2,360 | 1,778 | 2,496 | 2,039 | 2,032 | 1,900 | 1,734 | 2,359 | 2,165 | 1,849 | 2,033 | 1,637 | 1,954 |
| 4 | Chemical Oxygen Demand (COD) | mg/l | 5,714 | 6,622 | 3,831 | 7,788 | 5,494 | 8,287 | 6,484 | 6,317 | 5,966 | 3,607 | 5,874 | 5,434 | 4,438 | 6,018 | 4,829 | 5,167 |
| 5 | Total Suspended Solids (TSS) | mg/l | 3,638 | 3,944 | 2,994 | 5,617 | 2,934 | 5,366 | 3,120 | 3,945 | 2,964 | 2,757 | 4,270 | 4,157 | 4,086 | 3,842 | 2,570 | 3,521 |
| 6 | Total Dissolve Solids (TDS) | mg/l | 1,708 | 1,676 | 1,732 | 1,646 | 1,582 | 1,700 | 1,783 | 1,690 | 1,784 | 1,626 | 1,663 | 1,764 | 1,719 | 1,782 | 1,617 | 1,708 |
| B | Treated Effluent Quality: | | | | | | | | | | | | | | | | | |
| 1 | pH | --- | 7.23 | 6.81 | 6.62 | 6.59 | 7.33 | 7.29 | 6.5 | 6.91 | 6.77 | 6.98 | 7.22 | 6.54 | 6.92 | 7.5 | 7.43 | 7.05 |
| 2 | Biochemical Oxygen Demand (BOD5) | mg/l | 5 | 8 | 6 | 6 | 5 | 5 | 9 | 6 | 9 | 9 | 7 | 6 | 8 | 8 | 9 | 8 |
| 3 | Chemical Oxygen Demand (COD) | mg/l | 63 | 67 | 76 | 60 | 64 | 78 | 66 | 68 | 87 | 78 | 63 | 60 | 62 | 66 | 75 | 70 |
| 1 | Total Suspended Solids (TSS) | mg/l | 6 | 9 | 7 | 7 | 6 | 6 | 10 | 7 | 10 | 10 | 8 | 7 | 9 | 9 | 10 | 9 |
| 2 | Total Dissolve Solids (TDS) | mg/l | 1,845 | 1,743 | 1,801 | 1,778 | 1,582 | 1,700 | 1,836 | 1,755 | 1,909 | 1,772 | 1,663 | 1,870 | 1,891 | 1,925 | 1,763 | 1,828 |

6 DISPOSAL OF INERT:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average |
|---------|---|------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|-------|--------|--------|--------|--------|--------|----------------|
| 1 | <u>As per Tender:</u> Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility. | | | | | | | | | | | | | | | | | |
| 2 | Input Waste | TPD | 128.85 | 118.69 | 114.05 | 126.26 | 114.86 | 111.91 | 122.95 | 119.65 | 121.10 | 92.10 | 102.98 | 103.63 | 106.35 | 97.24 | 115.56 | 105.57 |
| 3 | Inert Fraction | Kg | 8,040 | 5,816 | 6,204 | 6,288 | 6,386 | 5,159 | 6,516 | 6,344 | 6,661 | 5,581 | 6,447 | 4,788 | 6,360 | 6,301 | 6,980 | 6,160 |
| 4 | % of Total Input Waste.....3/2 | % | 6.24% | 4.90% | 5.44% | 4.98% | 5.56% | 4.61% | 5.30% | 5.29% | 5.50% | 6.06% | 6.26% | 4.62% | 5.98% | 6.48% | 6.04% | 5.85% |

7 HOUSEKEEPING:

| Sr. No. | Description | Unit | 1-Aug | 2-Aug | 3-Aug | 4-Aug | 5-Aug | 6-Aug | 7-Aug | Weekly Average | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | 13-Aug | 14-Aug | Weekly Average |
|---------|-----------------------|------|----------|----------|----------|----------|----------|----------|----------|----------------|----------|----------|----------|----------|----------|----------|----------|----------------|
| 1 | Hygienic Conditions | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 2 | Cleanliness | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 3 | Manpower Deployed | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 4 | Safety Norms | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 5 | Treatment Methodology | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 6 | Storage Conditions | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |

1 INPUT WASTE COMPOSITION:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average | | |
|----------|---|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|---------------|--------------|--------------|--------------|----------------|---------------|----------------|
| A | Input Waste: | | | | | | | | | | | | | | | | | | | |
| 1 | Dry Waste | TPD | 0.610 | 9.700 | 7.980 | 9.360 | 3.900 | 6.160 | 12.410 | 7.16 | 6.33% | 9.640 | 2.560 | 10.160 | 0.700 | 0.700 | 2.950 | 10.440 | 5.31 | 5.21% |
| 2 | Wet Waste | TPD | 10.830 | 13.250 | 19.400 | 13.450 | 15.280 | 13.630 | 27.250 | 16.16 | 14.28% | 12.620 | 23.870 | 20.890 | 15.130 | 11.490 | 16.280 | 16.880 | 16.74 | 16.42% |
| 3 | Mixed Waste | TPD | 95.000 | 93.530 | 89.440 | 80.850 | 88.800 | 78.410 | 87.410 | 87.63 | 77.46% | 86.650 | 76.420 | 84.880 | 64.510 | 81.300 | 71.850 | 83.090 | 78.39 | 76.89% |
| 4 | Mulched Tree Waste | TPD | 0.000 | 0.620 | 3.110 | 5.030 | 2.600 | 3.970 | 0.000 | 2.19 | 1.94% | 3.490 | 2.320 | 1.580 | 0.000 | 0.000 | 1.010 | 2.240 | 1.52 | 1.49% |
| 5 | Total.....1+2+3+4 | TPD | 106.44 | 117.10 | 119.93 | 108.69 | 110.58 | 102.17 | 127.07 | 113.14 | 100.00% | 112.40 | 105.17 | 117.51 | 80.34 | 93.49 | 92.09 | 112.65 | 101.95 | 100.00% |
| B | Input Waste Composition: | | | | | | | | | | | | | | | | | | | |
| 1 | Organic / Bio degradable Fraction | 65.00% | 50.07 | 53.00 | 55.98 | 46.84 | 50.89 | 47.35 | 62.21 | 52.33 | 46.26% | 49.53 | 54.82 | 55.61 | 41.26 | 44.42 | 46.46 | 50.78 | 48.98 | 48.05% |
| 2 | Inorganic / Non-recyclable Fraction (RDF) | | 36.48 | 41.79 | 43.25 | 43.43 | 39.20 | 35.73 | 40.92 | 40.11 | 35.46% | 43.26 | 31.19 | 42.76 | 25.08 | 30.07 | 29.50 | 42.46 | 34.90 | 34.23% |
| 3 | Recyclables | 14.00% | 14.25 | 15.67 | 13.78 | 12.74 | 14.33 | 12.61 | 16.11 | 14.21 | 12.56% | 14.22 | 14.20 | 12.86 | 9.05 | 12.96 | 11.21 | 13.43 | 12.56 | 12.32% |
| | Glass | 0.05-0.1% 0.50% | 0.10 | 0.07 | 0.11 | 0.05 | 0.06 | 0.06 | 0.10 | 0.08 | 0.07% | 0.07 | 0.06 | 0.11 | 0.06 | 0.08 | 0.05 | 0.07 | 0.07 | 0.07% |
| | Metal | 0.3-0.5% 0.50% | 0.49 | 0.55 | 0.56 | 0.52 | 0.50 | 0.31 | 0.61 | 0.51 | 0.45% | 0.36 | 0.38 | 0.38 | 0.29 | 0.32 | 0.35 | 0.35 | 0.35 | 0.34% |
| | Paper / Cardboard / Tetrapack | 1.5-3.0% 4.00% | 1.78 | 3.01 | 2.25 | 1.82 | 1.84 | 1.78 | 3.76 | 2.32 | 2.05% | 1.91 | 2.88 | 2.04 | 1.27 | 2.65 | 1.46 | 2.91 | 2.16 | 2.12% |
| | Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics | 3.5- 7.5% 6.00% | 6.10 | 5.70 | 6.28 | 4.85 | 5.83 | 5.07 | 5.69 | 5.65 | 4.99% | 6.73 | 5.02 | 4.27 | 3.16 | 5.63 | 5.37 | 5.35 | 5.07 | 4.98% |
| | Thermocoal / Styrofoam | 0.05-0.1% 1.00% | 0.10 | 0.07 | 0.07 | 0.05 | 0.11 | 0.07 | 0.06 | 0.08 | 0.07% | 0.07 | 0.09 | 0.11 | 0.05 | 0.05 | 0.07 | 0.10 | 0.08 | 0.08% |
| | Cloth / Rags / Textiles | 1.0-2.5% 1.50% | 1.98 | 2.68 | 2.01 | 2.38 | 1.67 | 2.36 | 2.59 | 2.24 | 1.98% | 2.57 | 2.49 | 2.61 | 1.68 | 2.34 | 2.01 | 2.33 | 2.29 | 2.25% |
| | Rubber Items | 0.25-0.5% 0.50% | 0.31 | 0.50 | 0.58 | 0.30 | 0.51 | 0.39 | 0.50 | 0.44 | 0.39% | 0.48 | 0.36 | 0.31 | 0.25 | 0.26 | 0.41 | 0.45 | 0.36 | 0.35% |
| | Coconut | 1.5-3.5% 3.41 | 3.08 | 1.91 | 2.76 | 3.83 | 2.57 | 2.80 | 2.91 | 2.91 | 2.57% | 2.02 | 2.91 | 3.04 | 2.31 | 1.64 | 1.50 | 1.87 | 2.18 | 2.14% |
| 4 | Inert | 10.00% | 5.64 | 6.64 | 6.92 | 5.68 | 6.16 | 6.48 | 7.83 | 6.48 | 5.73% | 5.40 | 4.96 | 6.29 | 4.94 | 6.04 | 4.93 | 5.98 | 5.50 | 5.40% |
| 5 | Mulched Tree Waste | 11.00% | 0.00 | 0.62 | 3.11 | 5.03 | 2.60 | 3.97 | 0.00 | | | 3.49 | 2.32 | 1.58 | 0.00 | 0.00 | 1.01 | 2.24 | | |
| | Total.....1+2+3+4+5 | 100.00% | | | | | | | | | 100.00% | | | | | | | | | 100.00% |

2 RECYCLABLES:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average |
|----------|---------------------------|------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|----------------|
| A | Recyclables: | | | | | | | | | | | | | | | | | |
| 1 | Glass | Kg | 96 | 70 | 108 | 54 | 55 | 61 | 102 | 78 | 67 | 63 | 106 | 56 | 84 | 46 | 68 | 70 |
| 2 | Metal | Kg | 490 | 550 | 564 | 522 | 498 | 307 | 610 | 506 | 360 | 379 | 376 | 289 | 318 | 350 | 349 | 346 |
| 3 | Tetrapack | Kg | 91 | 123 | 113 | 80 | 94 | 85 | 128 | 102 | 103 | 92 | 110 | 44 | 140 | 55 | 160 | 101 |
| 4 | Paper / Cardboard | Kg | 1,687 | 2,886 | 2,142 | 1,735 | 1,742 | 1,692 | 3,633 | 2,217 | 1,808 | 2,789 | 1,934 | 1,225 | 2,506 | 1,400 | 2,747 | 2,058 |
| | Total.....3+4 | Kg | 1,778 | 3,009 | 2,255 | 1,815 | 1,836 | 1,777 | 3,761 | 2,319 | 1,911 | 2,881 | 2,044 | 1,269 | 2,646 | 1,455 | 2,907 | 2,159 |
| 5 | Plastic Films | Kg | 5,099 | 4,864 | 5,222 | 4,038 | 4,738 | 4,272 | 4,674 | 4,701 | 5,743 | 4,224 | 3,656 | 2,586 | 4,835 | 4,580 | 4,725 | 4,336 |
| 6 | Hard Plastic | Kg | 476 | 416 | 591 | 368 | 530 | 436 | 467 | 469 | 364 | 391 | 239 | 303 | 388 | 467 | 359 | 359 |
| 7 | Pet | Kg | 525 | 422 | 471 | 441 | 559 | 360 | 552 | 476 | 626 | 401 | 371 | 268 | 405 | 322 | 268 | 380 |
| | Total.....5+6+7 | Kg | 6,100 | 5,702 | 6,284 | 4,847 | 5,827 | 5,068 | 5,693 | 5,646 | 6,733 | 5,016 | 4,266 | 3,157 | 5,628 | 5,369 | 5,352 | 5,074 |
| 8 | Thermocal | Kg | 96 | 70 | 72 | 54 | 111 | 72 | 64 | 77 | 67 | 95 | 106 | 48 | 47 | 74 | 101 | 77 |
| 9 | Cloth / Rags / Textile | Kg | 1,505 | 2,049 | 1,410 | 1,795 | 1,247 | 1,744 | 1,960 | 1,673 | 1,977 | 1,947 | 2,035 | 1,246 | 1,823 | 1,457 | 1,679 | 1,738 |
| 10 | Jute Bags | Kg | 475 | 633 | 604 | 586 | 422 | 616 | 633 | 567 | 597 | 546 | 574 | 433 | 514 | 550 | 653 | 552 |
| | Total.....9+10 | Kg | 1,980 | 2,682 | 2,014 | 2,381 | 1,669 | 2,360 | 2,593 | 2,240 | 2,574 | 2,493 | 2,609 | 1,679 | 2,337 | 2,007 | 2,332 | 2,290 |
| 11 | Leather / Rubber / Rexine | Kg | 309 | 504 | 576 | 304 | 509 | 388 | 496 | 441 | 483 | 358 | 306 | 249 | 262 | 405 | 451 | 359 |
| 12 | Coconut | Kg | 3,406 | 3,080 | 1,907 | 2,761 | 3,826 | 2,575 | 2,796 | 2,907 | 2,023 | 2,913 | 3,044 | 2,306 | 1,636 | 1,501 | 1,870 | 2,185 |
| 13 | Total | Kg | 14,255 | 15,667 | 13,780 | 12,738 | 14,331 | 12,608 | 16,115 | 14,213 | 14,218 | 14,198 | 12,857 | 9,053 | 12,958 | 11,207 | 13,430 | 12,560 |
| | | TPD | 14.26 | 15.67 | 13.78 | 12.74 | 14.33 | 12.61 | 16.12 | 14.21 | 14.22 | 14.20 | 12.86 | 9.05 | 12.96 | 11.21 | 13.43 | 12.56 |

3 ELECTRICITY GENERATION:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average |
|----------|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| A | Biogas Gensets: | | | | | | | | | | | | | | | | | |
| 1 | Biogas Genset-I: Running Time | hr | 15.53 | 21.68 | 20.63 | 18.06 | 22.98 | 15.99 | 15.74 | 18.66 | 20.17 | 17.69 | 17.38 | 19.12 | 20.10 | 23.80 | 23.70 | 20.28 |
| 2 | Biogas Genset-I: Energy Generation | kW.hr | 2,191 | 3,145 | 3,032 | 2,744 | 3,430 | 2,154 | 2,275 | 2,710 | 2,749 | 2,386 | 2,680 | 2,876 | 2,200 | 2,720 | 2,670 | 2,612 |
| 3 | Biogas Genset-II: Running Time | hr | 19.04 | 20.98 | 15.92 | 20.05 | 21.93 | 22.82 | 11.55 | 18.90 | 14.90 | 21.86 | 22.32 | 19.72 | 20.15 | 21.15 | 23.70 | 20.54 |
| 4 | Biogas Genset-II: Energy Generation | kW.hr | 2,649 | 3,427 | 2,425 | 2,546 | 2,837 | 3,243 | 1,577 | 2,672 | 2,160 | 3,436 | 3,315 | 3,085 | 2,260 | 2,730 | 2,920 | 2,844 |
| 5 | Total.....2+4 | kW.hr | 4,840 | 6,572 | 5,457 | 5,290 | 6,267 | 5,397 | 3,852 | 5,382 | 4,909 | 5,822 | 5,995 | 5,961 | 4,460 | 5,450 | 5,590 | 5,455 |

| Sr. No. | Description | Unit | 15-Jul | 16-Jul | 17-Jul | 18-Jul | 19-Jul | 20-Jul | 21-Jul | Weekly Average | 22-Jul | 23-Jul | 24-Jul | 25-Jul | 26-Jul | 27-Jul | 28-Jul | Weekly Average |
|----------|--|------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|----------------|
| B | Electricity Generation: | | | | | | | | | | | | | | | | | |
| 1 | <u>As per Tender:</u> Minimum electricity to be generated in the plant shall be 0.4 MW per per 100 tons of Input Biodegradable Waste as received in the Facility. | | | | | | | | | | | | | | | | | |
| 2 | Biodegradable Waste.....1.B4 | Tons | 50.07 | 53.00 | 55.98 | 46.84 | 50.89 | 47.35 | 62.21 | 52.33 | 49.53 | 54.82 | 55.61 | 41.26 | 44.42 | 46.46 | 50.78 | 48.98 |
| 3 | Electricity Generation required as per Tender.....0.4 x 1000 x B2/100 | kWH | 200 | 212 | 224 | 187 | 204 | 189 | 240 | 208 | 198 | 219 | 222 | 165 | 178 | 186 | 203 | 196 |
| 4 | Electricity generated..... (A2/A1) + (A4/A3) | kWH | 280 | 308 | 299 | 279 | 279 | 277 | 281 | 286 | 281 | 292 | 303 | 307 | 222 | 243 | 236 | 269 |

4 BIOGAS FLARE:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average |
|---------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|----------------|
| 2 | Operation Time | hr/day | 5.70 | 3.05 | 5.11 | 4.87 | 6.50 | 4.25 | 5.83 | 5.04 | 3.15 | 4.89 | 3.68 | 6.69 | 7.05 | 6.17 | 5.41 | 5.29 |

5 EFFLUENT TREATMENT PLANT:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average |
|----------|----------------------------------|---------------------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|----------------|
| A | Raw Effluent Quality: | | | | | | | | | | | | | | | | | |
| 1 | Flow | m ³ /day | 56.98 | 68.83 | 62.91 | 49.82 | 60.36 | 57.54 | 54.35 | 58.68 | 66.56 | 48.41 | 41.49 | 56.00 | 42.90 | 45.87 | 54.88 | 50.87 |
| 2 | pH | --- | 6.33 | 6.19 | 6.36 | 7.18 | 6.79 | 7.87 | 7.79 | 6.93 | 7.63 | 6.89 | 6.56 | 6.86 | 6.8 | 6.26 | 6.63 | 6.80 |
| 3 | Biochemical Oxygen Demand (BOD5) | mg/l | 1,936 | 1,683 | 1,963 | 2,361 | 1,654 | 2,338 | 2,382 | 2,045 | 1,980 | 1,611 | 1,630 | 1,884 | 2,220 | 1,776 | 2,318 | 1,917 |
| 4 | Chemical Oxygen Demand (COD) | mg/l | 3,988 | 3,484 | 6,340 | 5,053 | 5,061 | 6,757 | 5,598 | 5,183 | 6,296 | 5,252 | 4,792 | 4,484 | 5,372 | 5,559 | 8,090 | 5,692 |
| 5 | Total Suspended Solids (TSS) | mg/l | 3,988 | 2,979 | 3,887 | 4,580 | 3,523 | 3,951 | 3,906 | 3,831 | 4,336 | 3,738 | 3,602 | 3,881 | 4,640 | 4,387 | 3,616 | 4,029 |
| 6 | Total Dissolve Solids (TDS) | mg/l | 1,532 | 1,556 | 1,620 | 1,791 | 1,564 | 1,509 | 1,737 | 1,616 | 1,574 | 1,795 | 1,547 | 1,670 | 1,669 | 1,648 | 1,799 | 1,672 |
| B | Treated Effluent Quality: | | | | | | | | | | | | | | | | | |
| 1 | pH | --- | 7.21 | 6.98 | 7.28 | 7.2 | 7.35 | 6.99 | 7.03 | 7.15 | 7.48 | 7.33 | 7.12 | 6.64 | 7.32 | 6.57 | 7.34 | 7.11 |
| 2 | Biochemical Oxygen Demand (BOD5) | mg/l | 8 | 6 | 9 | 7 | 9 | 9 | 5 | 8 | 8 | 7 | 6 | 5 | 9 | 5 | 6 | 7 |
| 3 | Chemical Oxygen Demand (COD) | mg/l | 84 | 60 | 64 | 69 | 83 | 61 | 84 | 72 | 85 | 82 | 86 | 82 | 66 | 79 | 80 | 80 |
| 1 | Total Suspended Solids (TSS) | mg/l | 9 | 7 | 10 | 8 | 10 | 10 | 6 | 9 | 9 | 8 | 7 | 6 | 10 | 6 | 7 | 8 |
| 2 | Total Dissolve Solids (TDS) | mg/l | 1,624 | 1,665 | 1,685 | 1,934 | 1,642 | 1,645 | 1,772 | 1,710 | 1,605 | 1,975 | 1,671 | 1,670 | 1,803 | 1,714 | 1,799 | 1,748 |

6 DISPOSAL OF INERT:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average |
|---------|---|------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|----------------|
| 1 | <u>As per Tender:</u> Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility. | | | | | | | | | | | | | | | | | |
| 2 | Input Waste | TPD | 106.44 | 117.10 | 119.93 | 108.69 | 110.58 | 102.17 | 127.07 | 113.14 | 112.40 | 105.17 | 117.51 | 80.34 | 93.49 | 92.09 | 112.65 | 101.95 |
| 3 | Inert Fraction | Kg | 5,641 | 6,640 | 6,920 | 5,684 | 6,159 | 6,478 | 7,828 | 6,479 | 5,395 | 4,964 | 6,287 | 4,941 | 6,039 | 4,927 | 5,982 | 5,505 |
| | | TPD | 5.64 | 6.64 | 6.92 | 5.68 | 6.16 | 6.48 | 7.83 | 6.48 | 5.40 | 4.96 | 6.29 | 4.94 | 6.04 | 4.93 | 5.98 | 5.50 |
| 4 | % of Total Input Waste.....3/2 | % | 5.30% | 5.67% | 5.77% | 5.23% | 5.57% | 6.34% | 6.16% | 5.72% | 4.80% | 4.72% | 5.35% | 6.15% | 6.46% | 5.35% | 5.31% | 5.45% |

7 HOUSEKEEPING:

| Sr. No. | Description | Unit | 15-Aug | 16-Aug | 17-Aug | 18-Aug | 19-Aug | 20-Aug | 21-Aug | Weekly Average | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | Weekly Average |
|---------|-----------------------|------|----------|----------|----------|----------|----------|----------|----------|----------------|----------|----------|----------|----------|----------|----------|----------|----------------|
| 1 | Hygienic Conditions | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 2 | Cleanliness | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 3 | Manpower Deployed | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 4 | Safety Norms | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 5 | Treatment Methodology | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |
| 6 | Storage Conditions | --- | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted | Accepted |

1 INPUT WASTE COMPOSITION:

| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | | Monthly Average | |
|----------|---|--------------------|---------------|--------------|--------------|----------------|----------------|-----------------|----------------|
| A | Input Waste: | | | | | | | | |
| 1 | Dry Waste | TPD | 3.170 | 4.110 | 13.210 | 6.83 | 0.07 | 7.88 | 7.26% |
| 2 | Wet Waste | TPD | 20.680 | 17.000 | 11.340 | 16.34 | 0.17 | 20.87 | 19.31% |
| 3 | Mixed Waste | TPD | 75.900 | 70.560 | 73.300 | 73.25 | 0.75 | 76.54 | 71.41% |
| 4 | Mulched Tree Waste | TPD | 0.340 | 1.910 | 0.740 | 1.00 | 0.01 | 2.26 | 2.03% |
| 5 | Total.....1+2+3+4 | TPD | 100.09 | 93.58 | 98.59 | 97.42 | 100.00% | 107.55 | 100.00% |
| B | Input Waste Composition: | | | | | | | | |
| 1 | Organic / Bio degradable Fraction | 65.00% | 53.01 | 46.85 | 42.05 | 47.30 | 48.56% | 52.83 | 49.13% |
| 2 | Inorganic / Non-recyclable Fraction (RDF) | | 28.65 | 30.78 | 36.78 | 32.07 | 32.92% | 35.05 | 32.58% |
| 3 | Recyclables | 14.00% | 12.12 | 11.72 | 14.57 | 12.80 | 13.14% | 13.72 | 12.76% |
| | Glass | 0.05-0.1% 0.50% | 0.10 | 0.05 | 0.09 | 0.08 | 0.08% | 0.08 | 0.07% |
| | Metal | 0.3-0.5% 0.50% | 0.41 | 0.37 | 0.47 | 0.42 | 0.43% | 0.44 | 0.41% |
| | Paper / Cardboard / Tetrapack | 1.5-3.0% 4.00% | 2.14 | 2.20 | 2.21 | 2.18 | 2.24% | 2.32 | 2.16% |
| | Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics | 3.5- 7.5% 6.00% | 5.37 | 4.89 | 6.47 | 5.58 | 5.73% | 5.54 | 5.17% |
| | Thermocoal / Styrofoam | 0.05-0.1% 1.00% | 0.10 | 0.05 | 0.05 | 0.07 | 0.07% | 0.08 | 0.07% |
| | Cloth / Rags / Textiles | 1.0-2.5% 1.50% | 1.84 | 1.86 | 2.32 | 2.01 | 2.06% | 2.24 | 2.08% |
| | Rubber Items | 0.25-0.5% 0.50% | 0.44 | 0.44 | 0.28 | 0.39 | 0.40% | 0.41 | 0.38% |
| | Coconut | 1.5-3.5% | 1.71 | 1.85 | 2.69 | 2.09 | 2.14% | 2.62 | 2.42% |
| 4 | Inert | 10.00% | 6.31 | 4.23 | 5.19 | 5.24 | 5.38% | 5.95 | 5.53% |
| 5 | Mulched Tree Waste | 11.00% | 0.34 | 1.91 | 0.74 | | | | |
| | Total.....1+2+3+4+5 | 100.00% | | | | | 100.00% | | 100.00% |

2 RECYCLABLES:

| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | | Monthly Average | |
|----------|---------------------------|------------|---------------|---------------|---------------|----------------|--|-----------------|--|
| A | Recyclables: | | | | | | | | |
| 1 | Glass | Kg | 100 | 47 | 89 | 79 | | 78 | |
| 2 | Metal | Kg | 410 | 374 | 473 | 419 | | 440 | |
| 3 | Tetrapack | Kg | 90 | 128 | 115 | 111 | | 109 | |
| 4 | Paper / Cardboard | Kg | 2,052 | 2,072 | 2,094 | 2,073 | | 2,214 | |
| | Total.....3+4 | Kg | 2,142 | 2,200 | 2,209 | 2,184 | | 2,323 | |
| 5 | Plastic Films | Kg | 4,488 | 4,395 | 5,510 | 4,798 | | 4,689 | |
| 6 | Hard Plastic | Kg | 425 | 245 | 485 | 385 | | 418 | |
| 7 | Pet | Kg | 462 | 255 | 472 | 396 | | 434 | |
| | Total.....5+6+7 | Kg | 5,375 | 4,895 | 6,467 | 5,579 | | 5,541 | |
| 8 | Thermocal | Kg | 100 | 47 | 49 | 65 | | 77 | |
| 9 | Cloth / Rags / Textile | Kg | 1,549 | 1,304 | 1,796 | 1,550 | | 1,708 | |
| 10 | Jute Bags | Kg | 293 | 559 | 521 | 458 | | 530 | |
| | Total.....9+10 | Kg | 1,842 | 1,863 | 2,317 | 2,007 | | 2,239 | |
| 11 | Leather / Rubber / Rexine | Kg | 440 | 440 | 276 | 385 | | 407 | |
| 12 | Coconut | Kg | 1,712 | 1,853 | 2,692 | 2,086 | | 2,618 | |
| 13 | Total | Kg | 12,121 | 11,719 | 14,572 | 12,804 | | 13,722 | |
| | | TPD | 12.12 | 11.72 | 14.57 | 12.80 | | 13.72 | |

3 ELECTRICITY GENERATION:

| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | | Monthly Average | |
|----------|-------------------------------------|--------------|--------------|--------------|--------------|----------------|--|-----------------|--|
| A | Biogas Gensets: | | | | | | | | |
| 1 | Biogas Genset-I: Running Time | hr | 23.80 | 23.80 | 21.90 | 23.17 | | 19.40 | |
| 2 | Biogas Genset-I: Energy Generation | kW.hr | 3,360 | 3,180 | 3,600 | 3,380 | | 2,777 | |
| 3 | Biogas Genset-II: Running Time | hr | 20.80 | 21.45 | 14.90 | 19.05 | | 18.58 | |
| 4 | Biogas Genset-II: Energy Generation | kW.hr | 2,950 | 2,940 | 2,480 | 2,790 | | 2,656 | |
| 5 | Total.....2+4 | kW.hr | 6,310 | 6,120 | 6,080 | 6,170 | | 5,434 | |

| Sr. No. | Description | Unit | 29-Jul | 30-Jul | 31-Jul | Weekly Average | Monthly Average |
|----------|--|------|--------|--------|--------|----------------|-----------------|
| B | Electricity Generation: | | | | | | |
| 1 | <u>As per Tender:</u> Minimum electricity to be generated in the plant shall be 0.4 MW per per 100 tons of Input Biodegradable Waste as received in the Facility. | | | | | | |
| 2 | Biodegradable Waste.....1.B4 | Tons | 53.01 | 46.85 | 42.05 | 47.30 | 52.83 |
| 3 | Electricity Generation required as per Tender.....0.4 x 1000 x B2/100 | kWH | 212 | 187 | 168 | 189 | 207 |
| 4 | Electricity generated..... (A2/A1) + (A4/A3) | kWH | 283 | 271 | 331 | 295 | 288 |

4 BIOGAS FLARE:

| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | Monthly Average |
|---------|----------------|--------|--------|--------|--------|----------------|-----------------|
| 2 | Operation Time | hr/day | 4.97 | 6.78 | 6.31 | 6.02 | 5.38 |

5 EFFLUENT TREATMENT PLANT:

| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | Monthly Average |
|----------|----------------------------------|---------------------|--------|--------|--------|----------------|-----------------|
| A | Raw Effluent Quality: | | | | | | |
| 1 | Flow | m ³ /day | 61.60 | 45.47 | 50.42 | 52.50 | 53.81 |
| 2 | pH | --- | 6.53 | 7.12 | 7.94 | 7.20 | 7.02 |
| 3 | Biochemical Oxygen Demand (BOD5) | mg/l | 1,808 | 1,764 | 1,769 | 1,780 | 1,946 |
| 4 | Chemical Oxygen Demand (COD) | mg/l | 4,918 | 5,010 | 5,449 | 5,126 | 5,497 |
| 5 | Total Suspended Solids (TSS) | mg/l | 3,761 | 2,769 | 3,149 | 3,226 | 3,710 |
| 6 | Total Dissolve Solids (TDS) | mg/l | 1,641 | 1,592 | 1,547 | 1,593 | 1,656 |
| B | Treated Effluent Quality: | | | | | | |
| 1 | pH | --- | 7.45 | 6.53 | 7.47 | 7.15 | 7.07 |
| 2 | Biochemical Oxygen Demand (BOD5) | mg/l | 6 | 6 | 9 | 7 | 7 |
| 3 | Chemical Oxygen Demand (COD) | mg/l | 64 | 80 | 68 | 71 | 72 |
| 1 | Total Suspended Solids (TSS) | mg/l | 7 | 7 | 10 | 8 | 8 |
| 2 | Total Dissolve Solids (TDS) | mg/l | 1,690 | 1,656 | 1,593 | 1,646 | 1,737 |

6 DISPOSAL OF INERT:

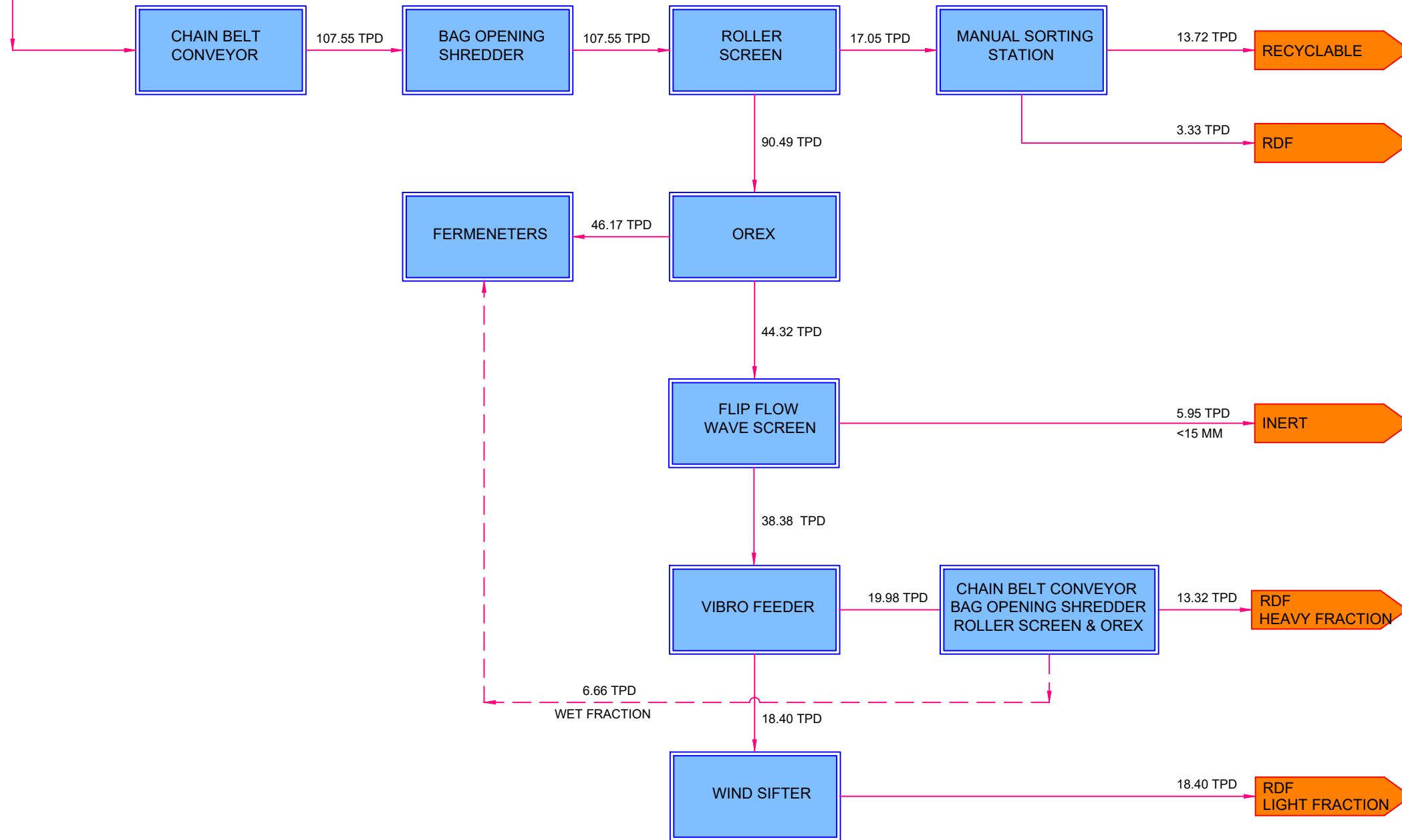
| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | Monthly Average |
|---------|---|------|--------|--------|--------|----------------|-----------------|
| 1 | <u>As per Tender:</u> Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility. | | | | | | |
| 2 | Input Waste | TPD | 100.09 | 93.58 | 98.59 | 97.42 | 107.55 |
| 3 | Inert Fraction | Kg | 6,306 | 4,230 | 5,186 | 5,240 | 5,946 |
| 4 | % of Total Input Waste.....3/2 | TPD | 6.31 | 4.23 | 5.19 | 5.24 | 5.95 |
| | | % | 6.30% | 4.52% | 5.26% | 5.36% | 5.53% |

7 HOUSEKEEPING:

| Sr. No. | Description | Unit | 29-Aug | 30-Aug | 31-Aug | Weekly Average | Monthly Average |
|---------|-----------------------|------|----------|----------|----------|----------------|-----------------|
| 1 | Hygienic Conditions | --- | Accepted | Accepted | Accepted | Accepted | Accepted |
| 2 | Cleanliness | --- | Accepted | Accepted | Accepted | Accepted | Accepted |
| 3 | Manpower Deployed | --- | Accepted | Accepted | Accepted | Accepted | Accepted |
| 4 | Safety Norms | --- | Accepted | Accepted | Accepted | Accepted | Accepted |
| 5 | Treatment Methodology | --- | Accepted | Accepted | Accepted | Accepted | Accepted |
| 6 | Storage Conditions | --- | Accepted | Accepted | Accepted | Accepted | Accepted |

| INPUT WASTE | | |
|-------------|--------------|--------------|
| SR. NO. | NAME | WEIGHT (TPD) |
| 1 | RECYCLABLES | 13.72 |
| 2 | RDF | 35.05 |
| 3 | WET FRACTION | 52.83 |
| 4 | INERT | 5.95 |
| TOTAL | | 107.55 |

| NUMBER OF RECYCLABLE FRACTIONS | | |
|--------------------------------|-----------------------|-------------|
| SR. NO. | NAME | WEIGHT (KG) |
| 01 | GLASS | 78 |
| 02 | METALS | 440 |
| 03 | TETRAPACK | 109 |
| 04 | PAPER/CARDBOARD | 2214 |
| 05 | PLASTIC FILM | 4689 |
| 06 | HARD PLASTIC | 418 |
| 07 | PET | 434 |
| 08 | THERMOCAL | 77 |
| 09 | CLOTH/RAGS/TEXTILE | 1708 |
| 10 | JUTE BAGS | 530 |
| 11 | LEATHER/RUBBER/REXINE | 407 |
| 12 | COCONUT | 2618 |
| TOTAL | | 13722 |



OWNER: .
 DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT.
 THE MANAGING ASSOCIATE:
 GOA STATE INFRASTRUCTURE DEVELOPMENT LTD.
 CONTRACTOR:
 M/s HINDUSTAN WASTE TREATMENT PVT. LTD.

| | NAME | SIGN | DATE |
|------|------|------|----------|
| DRWN | CS | | 18/08/17 |
| DSGN | SG | | 18/08/17 |
| CHKD | SG | | 18/08/17 |
| APPD | GK | | 18/08/17 |

TITLE :
 ANNEXURE -1:
 MASS BALANCE
 AUGUST 2017 (01-08-2017 TO 31-08-2017)

SCALE
 NTS

SIZE
 A3

REV.
 R0