

**Monthly Performance Report  
(HWT-NG100-MPR-29-R0)**

**December 2018  
(From 01/12/2018 to 31/12/2018)**

**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 December 2018**  
*(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: 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	<b>13 numbers</b> of fractions are being sorted daily from the input dry waste as received in the facility. The list of fractions are as follows: 1. Glass 2. Aluminium 3. Metal 4. Paper + Cardboard 5. Tetra Pack 6. Hard Plastic 7. PET 8. Mixed Plastic 9. Styrofoam + Thermocol 10. Cloth + Rags + Textile 11. Leather + Rexine + Rubber 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 <b>168.00 TPD</b> . Quantum of Inert is <b>0.21 TPD</b> 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 <b>0.53 MW/100 MT</b> of Input Biodegradable Waste as received in the Facility (in TPD).
4.	Biogas Flaring System	The Biogas Flaring System shall strictly be used only in case of	Biogas is being flared strictly, only under emergency and not as a

Sr. No.	Parameter	Performance Standard As per Schedule – 7	Actual Performance at Plant (Monthly Average)										
		emergency and not as a routine practice.	routine practice. The average running time of Biogas Flaring System is <b>2.38 hours/day</b> .										
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="1036 646 1403 856"> <tbody> <tr> <td>pH</td> <td>7.00</td> </tr> <tr> <td>BOD</td> <td>7 mg/l</td> </tr> <tr> <td>COD</td> <td>68 mg/l</td> </tr> <tr> <td>TSS</td> <td>8 mg/l</td> </tr> <tr> <td>TDS</td> <td>1,645 mg/l</td> </tr> </tbody> </table>	pH	7.00	BOD	7 mg/l	COD	68 mg/l	TSS	8 mg/l	TDS	1,645 mg/l
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BOD	7 mg/l												
COD	68 mg/l												
TSS	8 mg/l												
TDS	1,645 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"> <li>• High standard of Housekeeping, Cleanliness and Safety are being maintained at all times at the Plant.</li> <li>• Adequate manpower has been deployed in all shifts.</li> <li>• Also, the treatment methodology is being followed properly and proper storage conditions have been maintained in the Plant.</li> </ul>										

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

#	Plant Performance Data: December 2018		
Sr. No.	Content	Month	Signature
1	Input Waste Composition	From 01.12.2018 To 31.12.2018	
2	Recyclables		
3	Electricity Generation		
4	Biogas Flare		
5	Effluent Treatment Plant		
6	Inert		
7	Housekeeping		

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

1 WASTE:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
1A	<b>Input Waste:</b>																						
1	Type 1: Dry Waste	TPD	76.57	70.63	88.68	78.53	74.35	58.95	58.44	72.31	62.99	59.70	80.08	49.91	58.54	65.84	64.39	63.06	57.35	57.81	62.82	58.73	55.67
2	Type 2: Wet Waste	TPD	88.82	68.43	71.49	75.09	81.75	82.98	84.85	79.06	89.33	87.91	87.97	87.21	88.16	84.13	105.02	89.96	94.34	92.29	102.55	115.58	95.37
3	Type 3: Mixed Waste	TPD	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.24	0.00	0.00	2.84	30.56	15.87	6.56	1.39	8.17	7.32	1.43	6.61	1.26	1.31
4	Type 4: Tree Waste	TPD	2.55	0.66	0.00	1.10	1.62	1.67	1.13	1.25	1.27	0.17	1.55	1.51	1.28	0.31	2.15	1.18	1.82	2.05	1.11	1.19	1.96
5	<b>Total.....(1)+(2)+(3)+(4)</b>	<b>TPD</b>	<b>167.94</b>	<b>139.72</b>	<b>160.17</b>	<b>154.72</b>	<b>159.39</b>	<b>143.60</b>	<b>144.42</b>	<b>152.85</b>	<b>153.59</b>	<b>147.78</b>	<b>172.44</b>	<b>169.19</b>	<b>163.85</b>	<b>156.84</b>	<b>172.95</b>	<b>162.38</b>	<b>160.83</b>	<b>153.58</b>	<b>173.09</b>	<b>176.76</b>	<b>154.31</b>

# Note:

- 1 **Type-I: Dry Waste:** This has 25-30% Organic and 70-75% Inorganic.
- 2 **Type-II: Wet Waste:** This has 65-70% Organic and 30-35% Inorganic.
- 3 **Type-I: Mixed Waste:** This has 45-50% Organic and 50-55% Inorganic.

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
1B	<b>Output Products:</b>																						
1	Organic Fraction	TPD	82.06	65.92	70.63	71.62	77.17	70.17	72.08	72.81	75.66	73.96	84.15	87.96	81.04	79.32	87.43	81.36	84.09	79.20	90.79	92.90	80.07
2	Inorganic Fraction:																						
	Recyclables	TPD	11.48	10.71	12.09	12.17	11.36	10.28	10.65	11.25	11.00	10.60	13.09	12.02	11.82	10.99	13.32	11.83	11.46	11.20	12.06	13.19	11.23
	RDF	TPD	69.16	60.50	74.95	66.41	66.83	59.71	58.30	65.12	63.50	61.37	69.44	65.36	67.68	63.98	67.55	65.56	61.48	58.98	65.10	66.59	59.28
	Bulking Material	TPD	2.70	1.93	2.50	2.15	2.41	1.77	2.26	2.25	2.16	1.68	2.79	2.00	2.03	2.24	2.49	2.20	1.97	2.15	1.98	2.90	1.77
	Inert	TPD	0.00	0.00	0.00	1.27	0.00	0.00	0.00	0.18	0.00	0.00	1.42	0.34	0.00	0.00	0.00	0.25	0.00	0.00	2.06	0.00	0.00
3	Tree Waste	TPD	2.55	0.66	0.00	1.10	1.62	1.67	1.13	1.25	1.27	0.17	1.55	1.51	1.28	0.31	2.15	1.18	1.82	2.05	1.11	1.19	1.96
	<b>Total.....(1)+(2)+(3)</b>	<b>TPD</b>	<b>167.94</b>	<b>139.72</b>	<b>160.17</b>	<b>154.72</b>	<b>159.39</b>	<b>143.60</b>	<b>144.42</b>	<b>152.85</b>	<b>153.59</b>	<b>147.78</b>	<b>172.44</b>	<b>169.19</b>	<b>163.85</b>	<b>156.84</b>	<b>172.95</b>	<b>162.38</b>	<b>160.83</b>	<b>153.58</b>	<b>173.09</b>	<b>176.76</b>	<b>154.31</b>

2 RECYCLABLES:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
1	Glass	Kg	248	153	224	215	158	199	186	198	213	192	205	252	163	235	256	217	223	227	224	176	152
2	Aluminum	Kg	165	83	144	154	110	71	143	124	122	133	171	134	114	110	154	134	159	136	138	123	91
3	Metal	Kg	248	236	320	307	316	270	258	279	274	251	308	335	325	282	273	293	286	303	310	351	305
4	Tetra Pack	Kg	165	125	112	77	142	114	115	121	152	118	85	84	146	110	154	121	111	76	172	105	152
5	Hard Plastic	Kg	232	195	240	277	284	156	186	224	305	207	325	252	325	313	307	291	318	273	275	211	244
6	PET	Kg	215	209	160	307	268	213	158	219	183	251	222	335	260	172	325	250	318	242	241	334	168
7	Mixed Plastic	Kg	10,105	9,623	10,811	10,753	9,971	9,183	9,486	9,990	9,657	9,329	11,655	10,547	10,339	9,611	11,751	10,413	9,922	9,834	10,560	11,711	9,979
8	Thermocol + Styrofoam	Kg	99	83	80	77	110	71	115	91	91	118	120	84	146	157	102	117	127	106	138	176	137
9	Cloth + Rags + Textiles	Kg	1,588	793	1,169	1,045	1,530	880	716	1,103	1,356	1,107	1,658	1,593	1,040	1,190	1,196	1,306	954	818	860	1,334	1,204
10	Leather + Rexine + Rubber	Kg	1,373	1,001	1,442	1,429	1,451	923	989	1,230	762	900	872	1,442	1,382	1,565	974	1,128	1,542	1,243	1,204	1,545	1,006
11	Paper + Cardboard	Kg	1,058	834	1,105	968	1,041	923	903	976	1,036	930	1,094	1,073	992	986	1,127	1,034	970	909	1,118	1,176	929
12	Coconut	Kg	1,637	1,099	1,393	1,183	1,373	852	1,361	1,271	1,127	753	1,692	922	1,040	1,252	1,366	1,165	1,002	1,243	860	1,721	838

# Note:

- 1 Item No. 9 (Cloth + Rags + Textiles) and 10 (Leather + Rexine + Rubber) are sent to Cement Plants as RDF.
- 2 Item No. 11 (Paper + Cardboard) and 12 (Coconut) are used as Bulking Material in Composting.

3 ELECTRICITY GENERATION:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
3.1	<b>Biogas Gensets:</b>																						
1	Biogas Genset-I: Running Time	hr	23.70	21.60	23.85	22.65	21.30	23.50	23.25	22.84	21.90	22.80	23.85	22.55	24.00	23.85	21.85	22.97	24.00	23.60	23.60	24.00	24.00
2	Biogas Genset-I: Energy Generation	kW.hr	3,930	3,410	3,910	3,650	3,460	3,830	3,830	3,717.14	3,560	3,430	3,900	3,660	4,050	4,000	3,640	3,748.57	4,070	3,970	3,980	4,020	3,890
3	Biogas Genset-II: Running Time	hr	19.10	21.42	23.85	23.90	23.20	23.50	23.40	22.62	21.95	22.75	23.95	22.60	24.00	23.85	21.90	23.00	24.00	23.65	23.60	24.00	24.00
4	Biogas Genset-II: Energy Generation	kW.hr	2,935	3,372	3,880	3,880	3,560	3,780	3,810	3,602.43	3,480	3,260	3,870	3,610	4,050	3,980	3,600	3,692.86	4,070	3,970	3,990	3,980	3,800
5	<b>Total.....(1)+(2)+(3)+(4)</b>	<b>kW.hr</b>	<b>6,865</b>	<b>6,782</b>	<b>7,790</b>	<b>7,530</b>	<b>7,020</b>	<b>7,610</b>	<b>7,640</b>	<b>7,320</b>	<b>7,040</b>	<b>6,690</b>	<b>7,770</b>	<b>7,270</b>	<b>8,100</b>	<b>7,980</b>	<b>7,240</b>	<b>7,441</b>	<b>8,140</b>	<b>7,940</b>	<b>7,970</b>	<b>8,000</b>	<b>7,690</b>
3.2	<b>Electricity Generation:</b>																						
1	As per Tender: Minimum electricity to be generated in the plant shall be 0.4 MW per 100 tons of Input Biodegradable Waste as received in the Facility.	MW/100 MT	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
2	Biodegradable Waste	TPD	82.06	65.92	70.63	71.62	77.17	70.17	72.08	72.81	75.66	73.96	84.15	87.96	81.04	79.32	87.43	81.36	84.09	79.20	90.79	92.90	80.07
3	Electricity Generation = 100 * ((A2 ÷ A1) + (A4 ÷ A3)) ÷ 1000 ÷ 1B.1	kW	319	315	327	323	316	324	328	322	321	294	325	322	338	335	331	324	339	336	338	333	320
4	Electricity Generation	MW/100 MT	0.53	0.53	0.54	0.54	0.53	0.54	0.55	0.54	0.54	0.49	0.54	0.54	0.56	0.56	0.55	0.54	0.57	0.56	0.56	0.56	0.53

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

4 BIOGAS FLARE:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
1	Operation Time	hr/day	0.00	0.15	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	6.82	5.15	0.93	1.22	6.22	2.90	1.62	2.98	3.25	2.83	0.00

5 EFFLUENT TREATMENT PLANT:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	
<b>5.1 Raw Effluent Quality:</b>																								
1	Flow	m <sup>3</sup> /day	82.60	67.25	74.93	80.22	80.22	83.02	76.92	77.88	89.64	81.30	72.54	87.91	75.56	80.16	80.16	81.04	80.15	85.67	105.66	109.81	103.85	
2	pH	---	6.12	6.79	7.31	7.93	6.92	7.94	6.75	7.11	7.32	6.33	6.25	7.13	7.65	7.93	6.65	7.04	7.20	6.75	6.85	6.38	6.52	
3	Biochemical Oxygen Demand (BOD5)	mg/l	2,100	1,992	2,395	2,049	2,304	2,050	1,538	2,061	1,890	2,278	1,562	1,972	2,206	2,313	1,653	1,982	2,290	1,849	2,288	2,317	1,562	
4	Chemical Oxygen Demand (COD)	mg/l	4,347	4,841	6,347	5,963	6,682	4,469	3,968	5,231	5,084	6,424	4,561	6,310	4,941	6,245	3,356	5,274	7,168	4,493	5,674	5,932	4,420	
5	Total Suspended Solids (TSS)	mg/l	3,990	4,422	5,030	4,733	5,553	3,424	3,768	4,417	4,687	3,668	2,593	3,964	4,015	5,065	4,000	3,999	4,580	3,199	4,118	5,769	3,889	
6	Total Dissolve Solids (TDS)	mg/l	1,376	1,434	1,363	1,791	1,757	1,736	1,516	1,568	1,723	1,591	1,762	1,414	1,519	1,486	1,443	1,563	1,446	1,438	1,354	1,420	1,756	
<b>5.2 Treated Effluent Quality:</b>																								
1	pH	---	6.73	6.58	6.94	7.19	7.27	6.52	6.74	6.85	7.27	7.39	7.45	6.99	7.17	6.66	6.63	7.08	6.63	7.13	7.43	6.69	6.67	
2	Biochemical Oxygen Demand (BOD5)	mg/l	5	7	8	8	7	7	8	7	8	6	8	6	6	9	9	7	9	9	7	6	5	
3	Chemical Oxygen Demand (COD)	mg/l	61	81	65	74	63	82	64	70	61	76	52	58	65	76	64	65	67	51	82	81	52	
4	Total Suspended Solids (TSS)	mg/l	6	8	9	9	8	8	9	8	9	7	9	7	7	10	10	8	10	10	8	7	6	
5	Total Dissolve Solids (TDS)	mg/l	1,472	1,520	1,445	1,916	1,862	1,805	1,652	1,667	1,775	1,607	1,956	1,456	1,565	1,635	1,530	1,646	1,489	1,496	1,395	1,505	1,949	

6 DISPOSAL OF INERT:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
1	<b>As per Tender:</b> Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility.																						
2	Input Waste	TPD	165.39	139.06	160.17	153.62	157.77	141.93	143.29	151.60	152.32	147.61	170.89	167.68	162.57	156.53	170.80	161.20	159.01	151.53	171.98	175.57	152.35
3	Inert Fraction	TPD	0.00	0.00	0.00	1.27	0.00	0.00	0.00	0.18	0.00	0.00	1.42	0.34	0.00	0.00	0.00	0.25	0.00	0.00	2.06	0.00	0.00
4	% of Total Input Waste.....(3) ÷ (2)	%	0.00%	0.00%	0.00%	0.83%	0.00%	0.00%	0.00%	0.12%	0.00%	0.00%	0.83%	0.20%	0.00%	0.00%	0.00%	0.15%	0.00%	0.00%	1.20%	0.00%	0.00%

7 HOUSEKEEPING:

Sr. No.	Description	Unit	1-Dec	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	Weekly Average	8-Dec	9-Dec	10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	Weekly Average	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec
1	Hygienic Conditions	---	Accepted	Accepted	Accepted	Accepted	Accepted	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	Accepted	Accepted	Accepted	Accepted	Accepted
3	Manpower Deployed	---	Accepted	Accepted	Accepted	Accepted	Accepted	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	Accepted	Accepted	Accepted	Accepted	Accepted
5	Treatment Methodology	---	Accepted	Accepted	Accepted	Accepted	Accepted	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	Accepted	Accepted	Accepted	Accepted	Accepted

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1 WASTE:

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average				
1A	<b>Input Waste:</b>																					
1	Type 1: Dry Waste	TPD	59.89	56.11	58.34	35.80%	66.97	57.88	81.71	70.00	75.60	68.91	75.60	70.95	38.86%	64.76	58.82	67.31	63.63	35.51%	65.66	39.26%
2	Type 2: Wet Waste	TPD	98.65	102.56	100.19	61.48%	101.63	102.10	102.84	112.45	121.55	112.12	115.92	109.80	60.13%	109.18	109.51	119.97	112.89	62.99%	98.38	58.35%
3	Type 3: Mixed Waste	TPD	0.00	0.00	2.56	1.57%	1.97	0.00	0.00	0.00	0.87	1.24	0.00	0.58	0.32%	3.82	0.82	1.05	1.90	1.06%	2.69	1.63%
4	Type 4: Tree Waste	TPD	2.98	2.01	1.87	1.15%	0.51	0.37	2.08	3.13	1.29	0.34	1.11	1.26	0.69%	0.58	0.74	1.06	0.79	0.44%	1.27	0.76%
5	<b>Total.....(1)+(2)+(3)+(4)</b>	<b>TPD</b>	<b>161.52</b>	<b>160.68</b>	<b>162.97</b>	<b>100.00%</b>	<b>171.08</b>	<b>160.35</b>	<b>186.63</b>	<b>185.58</b>	<b>199.31</b>	<b>182.61</b>	<b>192.63</b>	<b>182.60</b>	<b>100.00%</b>	<b>178.34</b>	<b>169.89</b>	<b>189.39</b>	<b>179.21</b>	<b>100.00%</b>	<b>168.00</b>	<b>100.00%</b>

# Note:

- 1 **Type-I: Dry Waste:** This has 25-30% Organic and 70-75% Inorganic.
- 2 **Type-II: Wet Waste:** This has 65-70% Organic and 30-35% Inorganic.
- 3 **Type-I: Mixed Waste:** This has 45-50% Organic and 50-55% Inorganic.

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average				
1B	<b>Output Products:</b>																					
1	Organic Fraction	TPD	83.66	83.27	84.85	52.07%	85.68	83.82	89.06	92.41	106.60	93.56	100.05	93.03	50.95%	96.74	89.64	97.82	94.73	52.86%	85.36	50.72%
2	Inorganic Fraction:																					
	Recyclables	TPD	10.92	11.27	11.62	7.13%	12.79	12.13	13.42	12.64	14.34	13.94	14.21	13.35	7.31%	13.67	12.75	13.15	13.19	7.36%	12.25	7.29%
	RDF	TPD	60.89	60.97	61.90	37.98%	69.39	62.18	79.93	75.08	74.43	72.47	74.21	72.53	39.72%	64.90	64.59	75.20	68.23	38.07%	66.67	39.75%
	Bulking Material	TPD	1.97	2.17	2.13	1.31%	2.71	1.86	2.14	2.32	2.65	2.30	3.05	2.43	1.33%	2.45	2.17	2.17	2.26	1.26%	2.25	1.34%
	Inert	TPD	1.10	0.99	0.59	0.36%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%	0.21	0.13%
3	Tree Waste	TPD	2.98	2.01	1.87	1.15%	0.51	0.37	2.08	3.13	1.29	0.34	1.11	1.26	0.69%	0.58	0.74	1.06	0.79	0.44%	1.27	0.76%
	<b>Total.....(1)+(2)+(3)</b>	<b>TPD</b>	<b>161.52</b>	<b>160.68</b>	<b>162.97</b>	<b>100.00%</b>	<b>171.08</b>	<b>160.35</b>	<b>186.63</b>	<b>185.58</b>	<b>199.31</b>	<b>182.61</b>	<b>192.63</b>	<b>182.60</b>	<b>100.00%</b>	<b>178.34</b>	<b>169.89</b>	<b>189.39</b>	<b>179.21</b>	<b>100.00%</b>	<b>168.00</b>	<b>100.00%</b>

2 RECYCLABLES:

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
1	Glass	Kg	159	190	193	222	192	277	201	198	255	211	222	196	203	245	215	209
2	Aluminum	Kg	111	79	120	171	160	111	109	178	164	192	155	89	169	132	130	133
3	Metal	Kg	317	238	301	307	288	332	328	317	273	326	310	356	321	320	332	303
4	Tetra Pack	Kg	143	111	124	136	96	111	128	178	109	153	130	124	118	169	137	127
5	Hard Plastic	Kg	206	317	263	273	304	369	182	277	182	287	268	231	237	264	244	258
6	PET	Kg	301	317	274	205	272	277	328	317	346	326	296	284	186	188	219	252
7	Mixed Plastic	Kg	9,544	9,853	10,200	11,377	10,655	11,793	11,221	12,733	12,449	12,545	11,825	12,301	11,418	11,714	11,811	10,848
8	Thermocol + Styrofoam	Kg	143	159	141	102	160	148	146	139	164	172	147	89	101	113	101	119
9	Cloth + Rags + Textiles	Kg	809	857	977	1,569	1,344	1,606	1,624	1,644	1,750	1,168	1,529	1,209	1,370	1,224	1,268	1,236
10	Leather + Rexine + Rubber	Kg	1,395	1,412	1,335	1,382	1,344	1,532	1,387	1,960	1,294	1,858	1,537	1,422	1,438	1,864	1,575	1,361
11	Paper + Cardboard	Kg	983	1,031	1,017	1,194	1,056	1,181	1,277	1,366	1,130	1,341	1,221	1,102	1,167	1,130	1,133	1,076
12	Coconut	Kg	983	1,142	1,113	1,518	800	960	1,040	1,287	1,167	1,705	1,211	1,351	998	1,036	1,128	1,178

# Note:

- 1 Item No. 9 (Cloth + Rags + Textiles) and 10 (Leather + Rexine + Rubber) are sent to Cement Plants as RDF.
- 2 Item No. 11 (Paper + Cardboard) and 12 (Coconut) are used as Bulking Material in Composting.

3 ELECTRICITY GENERATION:

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
3.1	<b>Biogas Gensets:</b>																	
1	Biogas Genset-I: Running Time	hr	24.00	23.60	23.83	24.00	23.95	23.75	22.55	23.45	23.75	18.56	22.86	22.08	20.78	22.87	21.91	22.88
2	Biogas Genset-I: Energy Generation	kW.hr	3,810	3,890	3,947.14	3,940	3,860	3,680	3,080	3,630	3,360	3,237	3,541.00	3,011	3,731	2,835	3,192.33	3,629.24
3	Biogas Genset-II: Running Time	hr	24.00	23.70	23.85	23.95	24.00	23.50	22.60	23.40	23.75	17.75	22.71	20.90	21.04	22.85	21.60	22.76
4	Biogas Genset-II: Energy Generation	kW.hr	3,710	3,830	3,907.14	3,930	3,810	3,560	2,940	3,540	3,170	2,771	3,388.71	2,941	3,655	3,765	3,453.67	3,608.96
5	<b>Total.....(1)+(2)+(3)+(4)</b>	<b>kW.hr</b>	<b>7,520</b>	<b>7,720</b>	<b>7,854</b>	<b>7,870</b>	<b>7,670</b>	<b>7,240</b>	<b>6,020</b>	<b>7,170</b>	<b>6,530</b>	<b>6,008</b>	<b>6,930</b>	<b>5,952</b>	<b>7,386</b>	<b>6,600</b>	<b>6,646</b>	<b>7,238</b>
3.2	<b>Electricity Generation:</b>																	
1	As per Tender: Minimum electricity to be generated in the plant shall be 0.4 MW per 100 tons of Input Biodegradable Waste as received in the Facility.	MW/100 MT	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
2	Biodegradable Waste	TPD	83.66	83.27	84.85	85.68	83.82	89.06	92.41	106.60	93.56	100.05	93.03	96.74	89.64	97.82	94.73	85.36
3	Electricity Generation = 100 * ((A2 ÷ A1) + (A4 ÷ A3)) ÷ 1000 ÷ 1B.1	kW	313	326	329	328	320	306	267	306	275	331	305	277	353	289	306	317
4	Electricity Generation	MW/100 MT	0.52	0.54	0.55	0.55	0.53	0.51	0.44	0.51	0.46	0.55	0.51	0.46	0.59	0.48	0.51	0.53

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

**4 BIOGAS FLARE:**

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
1	Operation Time	hr/day	0.23	3.83	2.11	3.47	2.67	7.05	19.07	13.20	6.63	6.35	8.35	0.23	9.40	2.03	3.89	3.45

**5 EFFLUENT TREATMENT PLANT:**

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
<b>5.1 Raw Effluent Quality:</b>																		
1	Flow	m <sup>3</sup> /day	87.37	89.85	94.62	90.36	89.19	70.82	84.51	98.02	98.78	87.91	88.51	93.41	94.17	89.10	92.23	86.86
2	pH	---	7.79	7.36	6.98	6.45	6.80	6.11	7.38	7.39	7.07	6.65	6.84	7.80	7.02	6.50	7.11	7.01
3	Biochemical Oxygen Demand (BOD5)	mg/l	1,732	1,729	1,967	1,804	1,792	1,856	2,045	2,235	2,168	1,905	1,972	1,860	1,720	1,698	1,759	1,948
4	Chemical Oxygen Demand (COD)	mg/l	5,733	5,844	5,609	5,232	5,752	4,807	5,317	7,443	6,157	6,515	5,889	4,055	5,968	4,075	4,699	5,341
5	Total Suspended Solids (TSS)	mg/l	2,962	3,493	4,001	3,933	3,781	3,211	3,579	4,336	3,317	4,134	3,756	3,255	2,993	2,564	2,937	3,822
6	Total Dissolve Solids (TDS)	mg/l	1,672	1,694	1,540	1,326	1,667	1,736	1,383	1,585	1,609	1,497	1,543	1,442	1,452	1,712	1,535	1,550
<b>5.2 Treated Effluent Quality:</b>																		
1	pH	---	6.71	6.85	6.87	7.27	7.46	7.27	7.27	7.08	6.92	6.68	7.14	6.86	7.47	6.81	7.05	7.00
2	Biochemical Oxygen Demand (BOD5)	mg/l	8	5	7	8	7	7	5	6	9	5	7	6	9	8	8	7
3	Chemical Oxygen Demand (COD)	mg/l	71	57	66	87	85	55	60	52	77	65	69	61	83	64	69	68
4	Total Suspended Solids (TSS)	mg/l	9	6	8	9	8	8	6	7	10	6	8	7	10	9	9	8
5	Total Dissolve Solids (TDS)	mg/l	1,806	1,846	1,641	1,353	1,800	1,927	1,438	1,664	1,657	1,662	1,643	1,485	1,525	1,866	1,625	1,645

**6 DISPOSAL OF INERT:**

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
1	<b>As per Tender:</b> Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility.																	
2	Input Waste	TPD	158.54	158.67	161.09	170.57	159.98	184.55	182.45	198.02	182.27	191.52	181.34	177.76	169.15	188.33	178.41	166.73
3	Inert Fraction	TPD	1.10	0.99	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
4	% of Total Input Waste.....(3) ÷ (2)	%	0.69%	0.62%	0.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.13%

**7 HOUSEKEEPING:**

Sr. No.	Description	Unit	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly 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