

**Monthly Performance Report
(HWT-NG100-MPR-45-R0)**

**April 2020
(From 01/04/2020 to 30/04/2020)**

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

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

Submitted To
**Goa Waste Management Corporation (GWMC)
Department of Science & Technology (DS&T)**

Table – 1
Summary of Overall Average Results for April 2020
(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	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: 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 81.95 TPD . Quantum of Inert is 0.60 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 0.58 MW/100 MT 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 0.00 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 646 1403 856"> <tbody> <tr> <td>pH</td> <td>6.97</td> </tr> <tr> <td>BOD</td> <td>7 mg/l</td> </tr> <tr> <td>COD</td> <td>66 mg/l</td> </tr> <tr> <td>TSS</td> <td>8 mg/l</td> </tr> <tr> <td>TDS</td> <td>1,627 mg/l</td> </tr> </tbody> </table>	pH	6.97	BOD	7 mg/l	COD	66 mg/l	TSS	8 mg/l	TDS	1,627 mg/l
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COD	66 mg/l												
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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. 										

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

#	Plant Performance Data: April 2020		
Sr. No.	Content	Month	Signature
1	Input Waste Composition	From 01.04.2020 To 30.04.2020	
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

Sr. No.	Description	Unit	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	6-Apr	7-Apr	Weekly Average 1-7	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr	13-Apr	14-Apr	Weekly Average 8-14	15-Apr	16-Apr	17-Apr	18-Apr
6.2 Treated Effluent Quality:																						
1	pH	---	7.06	7.00	6.90	6.71	7.12	7.46	7.11	7.05	7.07	6.93	6.69	6.96	6.98	7.46	6.75	6.98	7.07	7.50	6.77	6.53
2	Biochemical Oxygen Demand (BOD5)	mg/l	5	7	6	7	5	9	6	6	9	5	7	5	6	7	7	7	8	9	7	7
3	Chemical Oxygen Demand (COD)	mg/l	80	74	90	64	85	62	72	75	62	52	51	53	84	69	56	61	66	73	61	80
4	Total Suspended Solids (TSS)	mg/l	6	8	7	8	6	10	7	7	10	6	8	6	7	8	8	8	9	10	8	8
5	Total Dissolve Solids (TDS)	mg/l	1,392	1,406	1,434	1,601	1,710	1,696	1,730	1,567	1,380	1,691	1,606	1,439	1,851	1,476	1,584	1,575	1,536	1,818	1,884	1,625

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

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

1 WASTE:																						
Sr. No.	Description	Unit	19-Apr	20-Apr	21-Apr	Weekly Average 15-21		22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Weekly Average 22-28		29-Apr	30-Apr	Weekly Average 29-30		Monthly Average 1-30	
1.1	Input Waste:																					
1	Type 1: Dry Waste	TPD	49.01	63.87	58.68	56.10	64.14%	59.16	52.63	55.31	57.44	42.84	64.02	65.05	56.64	63.06%	53.65	58.96	56.31	65.14%	53.49	65.28%
2	Type 2: Wet Waste	TPD	35.45	19.82	41.60	29.27	33.46%	38.00	26.13	36.10	21.94	32.70	20.60	40.15	30.80	34.30%	38.70	19.00	28.85	33.38%	26.82	32.73%
3	Type 3: Mixed Waste	TPD	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%	0.00	0.00	0.00	0.00%	0.00	0.00%
4	Type 4: Tree Waste	TPD	2.79	0.75	3.00	2.10	2.40%	0.49	0.57	4.63	3.83	3.09	1.94	2.06	2.37	2.64%	1.76	0.81	1.29	1.49%	1.63	1.99%
5	Total.....(1)+(2)+(3)+(4)		87.25	84.44	103.28	87.47	100.00%	97.65	79.33	96.04	83.21	78.63	86.56	107.26	89.81	100.00%	94.11	78.77	86.44	100.00%	81.95	100.00%

- # 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.

1.2 Output Products:																						
Sr. No.	Description	Unit	19-Apr	20-Apr	21-Apr	Weekly Average 15-21		22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Weekly Average 22-28		29-Apr	30-Apr	Weekly Average 29-30		Monthly Average 1-30	
1	Organic Fraction	TPD	38.92	31.65	42.77	35.40	40.47%	42.40	32.40	38.34	31.32	32.91	31.52	45.25	36.31	40.42%	40.17	27.63	33.90	39.22%	32.86	40.10%
2	Inorganic Fraction:																					
	Recyclables	TPD	6.58	6.44	6.94	6.46	7.39%	7.24	5.99	6.60	5.99	5.21	5.84	7.85	6.39	7.11%	6.82	5.96	6.39	7.40%	5.89	7.19%
	RDF	TPD	37.82	44.68	49.09	42.11	48.15%	43.89	39.41	45.20	40.38	34.24	46.28	48.61	42.57	47.40%	43.36	43.35	43.36	50.16%	39.84	48.62%
	Bulking Material	TPD	1.14	0.93	1.48	1.16	1.32%	1.36	0.97	1.27	1.17	1.22	0.98	1.59	1.22	1.36%	1.17	1.01	1.09	1.26%	1.12	1.37%
	Inert	TPD	0.00	0.00	0.00	0.24	0.27%	2.27	0.00	0.00	0.51	1.95	0.00	1.90	0.95	1.05%	0.82	0.00	0.41	0.47%	0.60	0.73%
3	Tree Waste	TPD	2.79	0.75	3.00	2.10	2.40%	0.49	0.57	4.63	3.83	3.09	1.94	2.06	2.37	2.64%	1.76	0.81	1.29	1.49%	1.63	1.99%
	Total.....(1)+(2)+(3)		87.25	84.44	103.28	87.47	100%	97.65	79.33	96.04	83.21	78.63	86.56	107.26	89.81	100%	94.11	78.77	86.44	100%	81.95	100%

2 RECYCLABLES:																						
Sr. No.	Description	Unit	19-Apr	20-Apr	21-Apr	Weekly Average 15-21		22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Weekly Average 22-28		29-Apr	30-Apr	Weekly Average 29-30		Monthly Average 1-30	
1	Glass	Kg	84	117	120	107		146	79	101	103	76	110	137	107		139	86	113		100	
2	Aluminum	Kg	51	75	60	59		58	79	82	40	68	76	53	65		46	39	43		59	
3	Metal	Kg	169	142	170	151		175	118	146	127	113	127	210	145		157	117	137		138	
4	Tetra Pack	Kg	84	59	90	65		97	79	64	79	76	42	105	77		55	70	63		66	
5	Hard Plastic	Kg	169	92	100	128		165	102	91	135	91	127	158	124		111	156	134		122	
6	PET	Kg	84	92	181	113		136	150	110	79	144	169	105	128		185	94	140		125	
7	Mixed Plastic	Kg	5,862	5,808	6,157	5,778		6,374	5,332	5,960	5,374	4,570	5,136	7,017	5,680		6,067	5,356	5,712		5,226	
8	Thermocol + Styrofoam	Kg	76	50	60	60		87	47	46	56	76	51	63	61		65	47	56		59	
9	Cloth + Rags + Textiles	Kg	532	795	662	565		913	709	841	548	506	609	547	668		610	577	594		599	
10	Leather + Rexine + Rubber	Kg	473	728	852	698		602	748	631	508	627	499	842	637		803	483	643		582	
11	Paper + Cardboard	Kg	583	502	622	543		661	496	548	540	514	508	642	558		637	483	560		516	
12	Coconut	Kg	557	427	862	616		700	473	722	635	710	474	947	666		536	530	533		607	

- # 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 DISPOSAL OF INERT:																						
Sr. No.	Description	Unit	19-Apr	20-Apr	21-Apr	Weekly Average 15-21		22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Weekly Average 22-28		29-Apr	30-Apr	Weekly Average 29-30		Monthly Average 1-30	
1	As per Tender: Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility.																					
2	Input Waste	TPD	87.25	84.44	103.28	87.47		97.65	79.33	96.04	83.21	78.63	86.56	107.26	89.81		94.11	78.77	86.44		81.95	
3	Inert Fraction	TPD	0.00	0.00	0.00	0.24		2.27	0.00	0.00	0.51	1.95	0.00	1.90	0.95		0.82	0.00	0.41		0.60	
4	% of Total Input Waste.....(3) ÷ (2)		%	0.00%	0.00%	0.00%	0.25%		2.32%	0.00%	0.00%	0.61%	2.48%	0.00%	1.03%		0.87%	0.00%	0.44%		0.73%	

4 ELECTRICITY GENERATION:																						
Sr. No.	Description	Unit	19-Apr	20-Apr	21-Apr	Weekly Average 15-21		22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Weekly Average 22-28		29-Apr	30-Apr	Weekly Average 29-30		Monthly Average 1-30	
3.1	Biogas Gensets:																					
1	Biogas Genset-I: Running Time	hr/day	13.64	23.90	11.75	14.47		14.05	0.00	14.30	22.45	0.00	21.35	19.61	13.11		23.30	18.50	20.90		13.78	
2	Biogas Genset-I: Biogas Consumption	Nm ³ /day	1,050	2,141	1,069	1,259		1,229	0	1,345	2,126	0	1,910	1,569	1,168		1,885	1,406	1,645		1,172	
3	Biogas Genset-I: Energy Generation	kW.hr/day	1,754	3,310	1,721	1,988		1,910	0	2,210	3,550	0	3,130	2,275	1,867.86		2,870	2,020	2,445		1,844	
4	Biogas Genset-II: Running Time	hr/day	22.58	3.05	23.26	15.08		14.05	22.90	9.05	1.20	23.30	6.60	20.97	14.01		14.05	23.30	18.68		14.96	
5	Biogas Genset-II: Biogas Consumption	Nm ³ /day	1,739	176	2,070	1,243		1,119	1,936	803	101	2,011	496	1,300	1,110		948	1,718	1,333		1,167	
6	Biogas Genset-II: Energy Generation	kW.hr/day	2,521	210	3,147	1,955		1,830	3,280	1,310	170	3,520	770	2,301	1,883		1,380	2,730	2,055		1,895	
7	Total Biogas Consumption = (2)+(5)		Nm ³ /day	2,789	2,318	3,139	2,502		2,348	1,936	2,148	2,227	2,011	2,406	2,278		2,833	3,123	2,978		2,339	
8	Total Energy Generation = (3)+(6)		kW.hr/day	4,275	3,520	4,868	3,943		3,740	3,280	3,520	3,720	3,520	3,900	4,576		4,250	4,750	4,500		3,739	

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6.2 Treated Effluent Quality:																		
1	pH	---	7.50	7.01	7.12	7.07	6.69	6.56	6.52	6.94	6.59	6.53	6.69	6.65	7.38	6.85	7.12	6.97
2	Biochemical Oxygen Demand (BOD5)	mg/l	9	7	9	8	5	6	8	6	5	6	5	6	9	7	8	7
3	Chemical Oxygen Demand (COD)	mg/l	50	53	57	63	58	61	52	80	83	55	53	63	62	77	70	66
4	Total Suspended Solids (TSS)	mg/l	10	8	10	9	6	7	9	7	6	7	6	7	10	8	9	8
5	Total Dissolve Solids (TDS)	mg/l	1,818	1,691	1,525	1,700	1,489	1,400	1,456	1,836	1,427	1,889	1,499	1,571	1,687	1,760	1,724	1,627

8 HOUSEKEEPING:																		
Sr. No.	Description	Unit	19-Apr	20-Apr	21-Apr	Weekly Average 15-21	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr	Weekly Average 22-28	29-Apr	30-Apr	Weekly Average 29-30	Monthly Average 1-30
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