

**Monthly Performance Report
(From 01/12/2016 to 31/12/2016)
(HWT-NG100-MPR-05-R0)**

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

Prepared By
Hindustan Waste Treatment Pvt. Ltd.

Submitted To:
**Government of Goa
Department of Science, Technology &
Environment**

Table – 1
Summary of Overall Average Results for December 2016
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. Newspaper s / 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. 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 <u>115.56 TPD</u> . Quantum of Inert is 8.81 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 0.4 MW per 100 tons of input wet biodegradable waste as received in the Facility (in TPD).	Electricity generation is <u>0.45</u> 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 7.02 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>7.17</td> </tr> <tr> <td>BOD</td> <td>7 mg/l</td> </tr> <tr> <td>COD</td> <td>69 mg/l</td> </tr> <tr> <td>TSS</td> <td>8 mg/l</td> </tr> <tr> <td>TDS</td> <td>1723 mg/l</td> </tr> </tbody> </table>	pH	7.17	BOD	7 mg/l	COD	69 mg/l	TSS	8 mg/l	TDS	1723 mg/l
pH	7.17												
BOD	7 mg/l												
COD	69 mg/l												
TSS	8 mg/l												
TDS	1723 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: December 2016		
Sr. No.	Content	Month	Signature
1	Input Waste Composition	December 2016 From 01.12.2016 To 31.12.2016	
2	Recyclables		
3	Electricity Generation		
4	Biogas Flare		
5	Effluent Treatment Plant		
6	Inert		
7	Housekeeping		

1 INPUT WASTE COMPOSITION:

Sr. No.	Input Waste Composition	As per Tender	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		
A	Input Waste:																				
1	Dry Waste	TPD	0.29	1.30	0.00	0.60	0.67	1.23	0.87	0.71	0.66%	0.02	0.59	0.04	0.00	0.21	0.26	0.54	0.24	0.23%	
2	Wet Waste	TPD	29.86	30.33	25.46	15.99	30.07	33.19	30.08	27.85	26.03%	41.29	22.85	29.73	24.28	28.92	24.23	29.13	28.63	27.81%	
3	Mixed Waste	TPD	72.07	74.92	73.92	76.06	88.44	83.21	80.44	78.44	73.31%	67.40	78.72	63.49	61.51	72.93	86.11	78.26	72.63	70.54%	
4	Mulched Tree waste	TPD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	2.23	1.65	0.92	0.88	2.17	1.06	1.36	1.47	1.42%	
5	Total.....1+2+3+4	TPD	102.22	106.55	99.38	92.65	119.18	117.63	111.39	107.00	100.00%	110.94	103.81	94.18	86.67	104.23	111.66	109.29	102.97	100.00%	
B	Input Waste Composition:																				
1	Organic / Bio degradable Fraction	65.00%	54.00	55.65	50.37	41.77	59.70	57.32	56.71	53.65	50.14%	61.85	48.99	51.51	45.62	54.01	52.99	56.52	53.07	51.54%	
2	Inorganic / Non-recyclable Fraction (RDF)		29.93	29.95	28.06	31.31	35.37	37.87	29.18	31.67	29.60%	29.92	33.83	21.42	25.02	32.91	37.63	31.85	30.37	29.49%	
3	Recyclables	14.00%	10.46	11.88	12.17	13.46	13.73	12.45	16.17	12.90	12.06%	11.82	13.80	13.37	8.66	10.44	14.17	11.61	11.98	11.64%	
	Glass	0.50%	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%	
	Metal	0.50%	0.00	0.00	0.23	0.00	0.00	0.25	0.00	0.07	0.06%	0.00	0.35	0.00	0.00	0.25	0.00	0.00	0.09	0.08%	
	Paper / Cardboard / Tetrapack	4.00%	1.82	2.71	2.89	2.59	2.87	1.96	2.68	2.50	2.34%	1.69	2.71	2.38	2.18	2.46	2.18	3.13	2.39	2.32%	
	Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics	6.00%	3.73	4.58	3.57	6.09	4.47	5.80	7.53	5.11	4.78%	4.36	6.47	6.36	3.15	4.20	7.74	3.96	5.18	5.03%	
	Thermocoal / Styrofoam	1.00%	0.00	0.00	0.07	0.00	0.00	0.00	0.11	0.03	0.02%	0.00	0.00	0.06	0.00	0.00	0.09	0.00	0.02	0.02%	
	Cloth / Rags / Textiles	1.50%	2.23	2.40	2.33	2.18	2.36	2.29	2.77	2.37	2.21%	1.95	2.25	1.32	1.68	1.06	1.47	1.97	1.67	1.62%	
	Rubber Items	0.50%	0.40	0.30	0.27	0.30	0.20	0.24	0.20	0.27	0.25%	0.48	0.25	0.28	0.13	0.27	0.28	0.31	0.28	0.28%	
	Coconut		2.28	1.90	2.82	2.31	3.83	1.91	2.87	2.56	2.39%	3.34	1.76	2.98	1.53	2.20	2.41	2.25	2.35	2.28%	
4	Inert	10.00%	7.83	9.07	8.78	6.11	10.38	10.00	9.32	8.78	8.21%	7.36	7.19	7.87	7.37	6.87	6.87	9.31	7.55	7.33%	
5	Mulched Tree Waste	11.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	2.23	1.65	0.92	0.88	2.17	1.06	1.36	1.47	1.42%	
	Total.....1+2+3+4+5	100.00%								100.00%										101.42%	

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		
A	Recyclables:																				
1	Glass	Kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Metal	Kg	0	0	229	0	0	247	0	68		0	353	0	0	250	0	0	86		
3	Tetrapack	Kg	0	0	142	0	0	67	0	30		89	0	74	0	61	0	0	32		
4	Paper / Cardboard	Kg	1,820	2,706	2,750	2,594	2,872	1,898	2,684	2,475		1,597	2,709	2,309	2,175	2,398	2,177	3,126	2,356		
	Total.....3+4	Kg	1,820	2,706	2,892	2,594	2,872	1,965	2,684	2,505		1,686	2,709	2,383	2,175	2,459	2,177	3,126	2,388		
5	Plastic Films	Kg	3,074	3,917	3,143	5,052	4,058	5,318	6,250	4,402		3,736	6,002	5,435	2,712	3,650	7,165	3,410	4,587		
6	Hard Plastic	Kg	362	275	310	560	197	174	572	350		419	265	362	189	244	310	285	296		
7	Pet	Kg	295	389	114	475	215	307	708	358		205	200	559	245	307	263	261	291		
	Total.....5+6+7	Kg	3,731	4,581	3,567	6,087	4,470	5,799	7,530	5,109		4,360	6,467	6,356	3,146	4,201	7,738	3,956	5,175		
8	Thermocal	Kg	0	0	70	0	0	0	111	26		0	0	57	0	0	89	0	21		
9	Cloth / Rags / Textile	Kg	1,809	2,031	1,821	1,533	1,973	1,945	1,958	1,867		1,607	1,692	1,043	1,323	744	1,163	1,407	1,283		
10	Jute Bags	Kg	419	367	505	644	387	349	815	498		346	561	276	358	319	311	561	390		
	Total.....9+10	Kg	2,228	2,398	2,326	2,177	2,360	2,294	2,773	2,365		1,953	2,253	1,319	1,681	1,063	1,474	1,968	1,673		
11	Leather / Rubber / Rexine	Kg	399	298	268	296	203	235	201	271		477	249	283	130	271	279	306	285		
12	Coconut	Kg	2,280	1,897	2,822	2,307	3,826	1,906	2,874	2,559		3,339	1,765	2,976	1,525	2,199	2,412	2,251	2,352		
13	Total	Kg	10,458	11,880	12,174	13,461	13,731	12,446	16,173	12,903		11,815	13,796	13,374	8,657	10,443	14,169	11,607	11,980		
		TPD	10.46	11.88	12.17	13.46	13.73	12.45	16.17	12.90		11.82	13.80	13.37	8.66	10.44	14.17	11.61	11.98		

3 ELECTRICITY GENERATION:

Sr. No.	Parameter	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
A Biogas Gensets:																		
1	Biogas Genset-I: Running Time	hr	14.21	14.84	12.12	18.37	18.08	20.58	14.74	16.13	21.76	16.18	15.49	11.84	18.35	10.93	19.9	16.35
2	Biogas Genset-I: Energy Generation	kW.hr	2043	1726	1680	2677	2645	2472	2227	2,210	2749	2238	1975	1698	2120	1633	2358	2,110
3	Biogas Genset-II: Running Time	hr	13.62	15.56	17.06	10.17	9.23	20.94	13.88	14.35	18.01	14.91	15.94	16.59	11.79	20	12.71	15.71
4	Biogas Genset-II: Energy Generation	kW.hr	1679	2125	1971	1139	1087	2345	2048	1,771	2233	1718	2091	2056	1598	2560	1796	2,007
5	Total.....2+4	kW.hr	3,722	3,851	3,651	3,816	3,732	4,817	4,275	3,981	4,982	3,956	4,066	3,754	3,718	4,193	4,154	4,118
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	54.00	55.65	50.37	41.77	59.70	57.32	56.71	53.65	61.85	48.99	51.51	45.62	54.01	52.99	56.52	53.07
3	Electricity Generation required as per Tender.....0.4 x 1000 x B2/100	kWH	216	223	201	167	239	229	227	215	247	196	206	182	216	212	226	212
4	Electricity generated..... (A2/A1) + (A4/A3)	kWH	267	253	254	258	264	232	299	261	250	254	259	267	251	277	260	260

4 BIOGAS FLARE:

Sr. No.	Parameter	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
1	<u>As per Tender:</u> The Biogas Flaring System shall strictly be used only in case of emergency and not as a routine practice.																	
2	Operation Time	hr/day	5.54	7.88	7.99	6.26	6.93	7.01	7.61	7.03	7.39	5.56	6.37	7.15	7.97	6.61	8.36	7.06

5 EFFLUENT TREATMENT PLANT:

Sr. No.	Parameter	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
A Raw Effluent Quality:																		
1	Flow	m ³ /day	60.86	52.05	50.38	66.67	57.41	52.50	52.23	56.01	50.89	67.87	66.44	64.65	49.28	66.34	58.00	60.50
2	pH	---	7.22	6.61	5.73	5.67	7.33	6.00	6.16	6.39	6.48	7.76	5.63	7.67	8.48	6.59	7.44	7.15
3	Biochemical Oxygen Demand (BOD5)	mg/l	1,517	1,655	1,913	2,244	2,322	1,968	2,150	1,967	2,045	1,968	2,045	2,382	2,050	1,709	1,652	1,979
4	Chemical Oxygen Demand (COD)	mg/l	3,656	3,873	3,730	6,440	4,528	4,507	6,407	4,734	5,706	5,766	5,256	4,573	4,900	3,435	3,155	4,684
5	Total Suspended Solids (TSS)	mg/l	1,866	2,681	3,692	3,590	3,483	3,857	3,225	3,199	3,640	3,267	4,008	4,669	2,501	2,256	2,247	3,227
6	Total Dissolve Solids (TDS)	mg/l	1,768	1,671	1,582	1,775	1,684	1,503	1,599	1,655	1,625	1,541	1,734	1,697	1,699	1,787	1,549	1,662
B Treated Effluent Quality:																		
1	pH	---	7.14	6.96	7.23	7.38	6.67	7.1	7.25	7.10	7.38	7.03	7.2	7.36	6.87	7.26	6.96	7.15
2	Biochemical Oxygen Demand (BOD5)	mg/l	7	6	9	8	7	9	6	7	7	7	9	8	6	8	8	8
3	Chemical Oxygen Demand (COD)	mg/l	89	69	51	81	73	83	58	72	52	82	66	56	51	41	83	62
1	Total Suspended Solids (TSS)	mg/l	8	7	10	9	8	10	7	8	8	8	10	9	7	9	9	9
2	Total Dissolve Solids (TDS)	mg/l	1,786	1,771	1,614	1,917	1,852	1,608	1,631	1,740	1,625	1,587	1,751	1,748	1,767	1,805	1,595	1,697

6 DISPOSAL OF INERT:

Sr. No.	Parameter	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
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	102.22	106.55	99.38	92.65	119.18	117.63	111.39	107.00	110.94	103.81	94.18	86.67	104.23	111.66	109.29	102.97
3	Inert Fraction	Kg	7,830	9,067	8,775	6,106	10,381	9,999	9,323	8,783	7,355	7,194	7,873	7,367	6,869	6,867	9,312	7,548
4	% of Total Input Waste.....3/2	%	7.66%	8.51%	8.83%	6.59%	8.71%	8.50%	8.37%	8.17%	6.63%	6.93%	8.36%	8.50%	6.59%	6.15%	8.52%	7.38%

7 HOUSEKEEPING:

Sr. No.	Parameter	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
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.	Input Waste Composition	As per Tender	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average		22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	
A	Input Waste:																			
1	Dry Waste	TPD	0.31	0.90	0.00	0.00	0.00	0.92	1.47	0.51	0.47%	0.79	1.46	0.00	0.65	0.92	0.76	1.91	0.93	0.75%
2	Wet Waste	TPD	27.05	28.89	27.72	28.92	27.36	28.49	33.92	28.91	26.40%	32.08	18.66	39.72	27.74	29.80	26.09	33.49	29.65	23.93%
3	Mixed Waste	TPD	82.64	77.75	80.41	76.89	74.98	85.44	77.04	79.31	72.42%	81.63	84.03	89.84	75.63	98.87	100.13	116.55	92.38	74.53%
4	Mulched Tree waste	TPD	0.00	0.70	0.85	0.00	0.00	2.82	1.06	0.78	0.71%	0.00	0.88	1.15	0.00	1.41	1.98	1.45	0.98	0.79%
5	Total.....1+2+3+4	TPD	110.00	108.24	108.98	105.81	102.34	117.67	113.49	109.50	100.00%	114.50	105.03	130.71	104.02	131.00	128.96	153.40	123.95	100.00%
B	Input Waste Composition:																			
1	Organic / Bio degradable Fraction	65.00%	55.81	56.80	54.66	54.76	52.93	59.08	59.73	56.25	51.37%	59.75	48.07	66.67	53.38	60.45	57.13	69.15	59.23	47.79%
2	Inorganic / Non-recyclable Fraction (RDF)		31.28	30.58	28.95	28.93	28.52	33.60	32.80	30.66	28.00%	31.11	37.03	36.76	29.74	43.41	46.61	56.47	40.16	32.40%
3	Recyclables	14.00%	15.92	13.75	15.63	13.68	14.38	17.45	13.83	14.95	13.65%	14.91	13.35	16.56	12.49	15.82	15.54	17.53	15.17	12.24%
	Glass	0.50%	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%
	Metal	0.50%	0.00	0.38	0.00	0.00	0.39	0.00	0.00	0.11	0.10%	0.40	0.00	0.00	0.00	0.48	0.00	0.00	0.13	0.10%
	Paper / Cardboard / Tetrapack	4.00%	1.78	1.81	1.68	2.67	2.00	3.40	2.00	2.19	2.00%	2.07	2.04	2.86	1.78	3.79	3.47	2.72	2.67	2.16%
	Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics	6.00%	8.12	6.99	8.06	6.46	5.80	7.35	6.58	7.05	6.44%	8.13	6.69	8.14	6.00	5.11	5.75	9.28	7.02	5.66%
	Thermocoal / Styrofoam	1.00%	0.00	0.10	0.00	0.00	0.08	0.00	0.00	0.03	0.02%	0.07	0.00	0.00	0.09	0.00	0.00	0.11	0.04	0.03%
	Cloth / Rags / Textiles	1.50%	2.18	2.21	1.82	2.53	2.53	2.93	2.55	2.39	2.18%	2.11	2.01	2.29	1.50	2.44	1.83	1.83	2.00	1.61%
	Rubber Items	0.50%	0.29	0.34	0.27	0.33	0.26	0.25	0.40	0.30	0.28%	0.38	0.33	0.51	0.29	0.48	0.22	0.46	0.38	0.31%
	Coconut		3.55	1.93	3.79	1.69	3.33	3.52	2.30	2.87	2.62%	1.75	2.29	2.76	2.83	3.52	4.27	3.14	2.94	2.37%
4	Inert	10.00%	7.00	7.11	9.74	8.44	6.51	7.54	7.13	7.64	6.98%	8.74	6.59	10.72	8.40	11.32	9.68	10.25	9.39	7.57%
5	Mulched Tree Waste	11.00%	0.00	0.70	0.85	0.00	0.00	2.82	1.06	0.78	0.71%	0.00	0.88	1.15	0.00	1.41	1.98	1.45	0.98	0.79%
	Total.....1+2+3+4+5	100.00%								100.71%										100.79%

2 RECYCLABLES:

Sr. No.	Description	Unit	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average		22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average	
A	Recyclables:																			
1	Glass	Kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Metal	Kg	0	379	0	0	389	0	0	110		401	0	0	0	485	0	0	127	
3	Tetrapack	Kg	96	0	0	112	0	92	0	43		0	0	123	0	0	73	0	28	
4	Paper / Cardboard	Kg	1,686	1,808	1,678	2,554	1,996	3,309	1,997	2,147		2,072	2,038	2,739	1,779	3,786	3,396	2,715	2,646	
	Total.....3+4	Kg	1,782	1,808	1,678	2,666	1,996	3,401	1,997	2,190		2,072	2,038	2,862	1,779	3,786	3,469	2,715	2,674	
5	Plastic Films	Kg	6,576	6,251	6,919	5,566	4,857	6,847	5,733	6,107		7,211	5,961	6,588	5,090	4,470	5,096	8,046	6,066	
6	Hard Plastic	Kg	812	420	508	284	464	287	197	425		537	508	774	546	444	224	835	553	
7	Pet	Kg	731	322	637	614	482	221	652	523		382	221	782	366	194	431	399	396	
	Total.....5+6+7	Kg	8,119	6,993	8,064	6,464	5,803	7,355	6,582	7,054		8,130	6,690	8,144	6,002	5,108	5,751	9,280	7,015	
8	Thermocal	Kg	0	97	0	0	82	0	0	26		69	0	0	94	0	0	107	39	
9	Cloth / Rags / Textile	Kg	1,673	1,819	1,456	2,000	1,974	2,215	2,096	1,890		1,629	1,637	1,645	1,125	1,869	1,518	1,391	1,545	
10	Jute Bags	Kg	505	389	364	529	554	715	457	502		478	369	643	373	568	313	434	454	
	Total.....9+10	Kg	2,178	2,208	1,820	2,529	2,528	2,930	2,553	2,392		2,107	2,006	2,288	1,498	2,437	1,831	1,825	1,999	
11	Leather / Rubber / Rexine	Kg	286	336	272	328	256	247	397	303		378	326	510	291	485	219	460	381	
12	Coconut	Kg	3,553	1,927	3,793	1,693	3,326	3,518	2,304	2,873		1,752	2,290	2,758	2,829	3,524	4,269	3,145	2,938	
13	Total	Kg	15,918	13,748	15,627	13,680	14,380	17,451	13,833	14,948		14,909	13,350	16,562	12,493	15,825	15,539	17,532	15,173	
		TPD	15.92	13.75	15.63	13.68	14.38	17.45	13.83	14.95		14.91	13.35	16.56	12.49	15.83	15.54	17.53	15.17	

3 ELECTRICITY GENERATION:

Sr. No.	Parameter	Unit	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average
A Biogas Gensets:																		
1	Biogas Genset-I: Running Time	hr	12.67	13.11	17.64	11.28	23.04	16.00	17.00	15.82	17.22	22.74	18.45	17.26	17.89	22.73	19.00	19.33
2	Biogas Genset-I: Energy Generation	kW.hr	1539	1805	2312	1398	2564	1896	2568	2,012	2069	2662	2654	2043	2040	2530	2692	2,384
3	Biogas Genset-II: Running Time	hr	17.58	15.89	11.85	18.42	8.04	14.43	8.46	13.52	13.25	6.93	16.32	15.14	21.01	18.49	14.31	15.06
4	Biogas Genset-II: Energy Generation	kW.hr	2605	2047	1567	2285	1157	1733	1101	1,785	1793	913	1999	1749	2687	2220	2162	1,932
5	Total.....2+4	kW.hr	4,144	3,852	3,879	3,683	3,721	3,629	3,669	3,797	3,862	3,575	4,653	3,792	4,727	4,750	4,854	4,316
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	55.81	56.80	54.66	54.76	52.93	59.08	59.73	56.25	59.75	48.07	66.67	53.38	60.45	57.13	69.15	59.23
3	Electricity Generation required as per Tender.....0.4 x 1000 x B2/100	kWH	223	227	219	219	212	236	239	225	239	192	267	214	242	229	277	237
4	Electricity generated..... (A2/A1) + (A4/A3)	kWH	270	267	263	248	255	239	281	260	255	249	266	234	242	231	293	253

4 BIOGAS FLARE:

Sr. No.	Parameter	Unit	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average
1	<u>As per Tender:</u> The Biogas Flaring System shall strictly be used only in case of emergency and not as a routine practice.																	
2	Operation Time	hr/day	7.04	5.99	7.85	8.20	8.45	5.83	7.15	7.22	5.81	7.26	7.00	7.17	8.24	5.71	5.74	6.70

5 EFFLUENT TREATMENT PLANT:

Sr. No.	Parameter	Unit	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	Weekly Average
A Raw Effluent Quality:																		
1	Flow	m ³ /day	61.29	54.69	42.54	67.71	67.60	58.89	66.07	59.83	60.38	66.10	53.68	62.23	44.15	51.78	66.02	57.76
2	pH	---	8.13	6.97	7.03	7.7	6.92	8.01	7.19	7.42	7.2	7.53	5.84	8.46	7.93	7.11	7.85	7.42
3	Biochemical Oxygen Demand (BOD5)	mg/l	2,258	2,290	1,691	2,311	2,278	1,923	1,649	2,057	1,809	2,479	1,815	2,294	1,958	1,887	1,909	2,022
4	Chemical Oxygen Demand (COD)	mg/l	5,984	5,954	4,735	6,656	4,442	5,577	3,496	5,263	5,246	6,495	5,372	4,611	3,994	3,604	4,429	4,822
5	Total Suspended Solids (TSS)	mg/l	3,477	3,366	2,706	4,345	3,941	2,885	2,457	3,311	3,238	3,719	2,704	3,372	2,898	2,604	2,978	3,073
6	Total Dissolve Solids (TDS)	mg/l	1,502	1,711	1,675	1,757	1,658	1,548	1,643	1,642	1,507	1,567	1,574	1,608	1,607	1,674	1,507	1,578
B Treated Effluent Quality:																		
1	pH	---	7.44	6.8	6.79	7.46	6.76	7.31	6.89	7.06	7.02	7.08	7.31	7.42	7.35	7.5	7.38	7.29
2	Biochemical Oxygen Demand (BOD5)	mg/l	9	6	9	8	6	8	7	8	8	7	8	9	8	9	8	8
3	Chemical Oxygen Demand (COD)	mg/l	81	74	52	86	85	69	49	71	77	88	42	62	68	85	50	67
1	Total Suspended Solids (TSS)	mg/l	10	7	10	9	7	9	8	9	9	8	9	10	9	10	9	9
2	Total Dissolve Solids (TDS)	mg/l	1,622	1,728	1,792	1,792	1,824	1,672	1,676	1,729	1,658	1,708	1,637	1,656	1,687	1,758	1,658	1,680

6 DISPOSAL OF INERT:

Sr. No.	Parameter	Unit	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	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	110.00	108.24	108.98	105.81	102.34	117.67	113.49	109.50	114.50	105.03	130.71	104.02	131.00	128.96	153.40	123.95
3	Inert Fraction	Kg	6,996	7,111	9,743	8,444	6,509	7,543	7,127	7,639	8,736	6,585	10,718	8,405	11,318	9,685	10,247	9,385
4	% of Total Input Waste.....3/2	%	6.36%	6.57%	8.94%	7.98%	6.36%	6.41%	6.28%	6.99%	7.63%	6.27%	8.20%	8.08%	8.64%	7.51%	6.68%	7.57%

7 HOUSEKEEPING:

Sr. No.	Parameter	Unit	15-Dec	16-Dec	17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	Weekly Average	22-Dec	23-Dec	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	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.	Input Waste Composition	As per Tender	29-Dec	30-Dec	31-Dec	Weekly Average		Monthly Average	
A	Input Waste:								
1	Dry Waste	TPD	0.41	0.00	0.00	0.14	0.00	0.50	0.44%
2	Wet Waste	TPD	31.81	34.84	27.72	31.46	0.23	29.30	25.51%
3	Mixed Waste	TPD	97.85	102.92	104.25	101.67	0.76	84.89	73.29%
4	Mulched Tree waste	TPD	1.39	1.61	0.29	1.10	0.01	0.86	0.75%
5	Total.....1+2+3+4	TPD	131.46	139.37	132.26	134.36	100.00%	115.56	100.00%
B	Input Waste Composition:								
1	Organic / Bio degradable Fraction	65.00%	61.56	66.33	59.62	62.50	46.52%	56.94	49.47%
2	Inorganic / Non-recyclable Fraction (RDF)		42.33	41.33	44.11	42.59	31.70%	35.09	30.24%
3	Recyclables	14.00%	17.10	19.67	18.98	18.58	13.83%	14.72	12.68%
	Glass	0.50%	0.00	0.00	0.00	0.00	0.00%	0.00	0.00%
	Metal	0.50%	0.00	0.60	0.00	0.20	0.15%	0.12	0.10%
	Paper / Cardboard / Tetrapack	4.00%	2.93	2.66	3.08	2.89	2.15%	2.53	2.19%
	Mixed Plastic, Bottles, Cups, Food Packets, Coated Plastics	6.00%	6.52	9.30	9.55	8.46	6.29%	6.56	5.64%
	Thermocoal / Styrofoam	1.00%	0.00	0.00	0.11	0.04	0.03%	0.03	0.03%
	Cloth / Rags / Textiles	1.50%	2.87	2.37	2.21	2.48	1.85%	2.18	1.90%
	Rubber Items	0.50%	0.22	0.22	0.30	0.25	0.19%	0.30	0.26%
	Coconut		4.56	4.52	3.73	4.27	3.18%	3.00	2.57%
4	Inert	10.00%	10.46	12.04	9.55	10.68	7.95%	8.81	7.61%
5	Mulched Tree Waste	11.00%	1.39	1.61	0.29	1.10	0.82%		
	Total.....1+2+3+4+5	100.00%					100.82%		100.00%

2 RECYCLABLES:

Sr. No.	Description	Unit	29-Dec	30-Dec	31-Dec	Weekly Average		Monthly Average	
A	Recyclables:								
1	Glass	Kg	0	0	0	0		0	
2	Metal	Kg	0	599	0	200		118	
3	Tetrapack	Kg	0	122	0	41		35	
4	Paper / Cardboard	Kg	2,932	2,540	3,082	2,851		2,495	
	Total.....3+4	Kg	2,932	2,662	3,082	2,892		2,530	
5	Plastic Films	Kg	5,301	8,450	8,279	7,343		5,701	
6	Hard Plastic	Kg	574	456	592	541		433	
7	Pet	Kg	646	390	678	571		428	
	Total.....5+6+7	Kg	6,521	9,296	9,549	8,455		6,562	
8	Thermocal	Kg	0	0	106	35		29	
9	Cloth / Rags / Textile	Kg	2,422	1,813	1,610	1,948		1,707	
10	Jute Bags	Kg	444	557	599	533		475	
	Total.....9+10	Kg	2,866	2,370	2,209	2,482		2,182	
11	Leather / Rubber / Rexine	Kg	223	223	304	250		298	
12	Coconut	Kg	4,562	4,516	3,730	4,269		2,998	
13	Total	Kg	17,104	19,666	18,980	18,583		14,718	
		TPD	17.10	19.67	18.98	18.58		14.72	

3 ELECTRICITY GENERATION:

Sr. No.	Parameter	Unit	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
A Biogas Gensets:							
1	Biogas Genset-I: Running Time	hr	19.66	20.58	17.6	19.28	17.38
2	Biogas Genset-I: Energy Generation	kW.hr	2742	2548	2554	2,615	2,266
3	Biogas Genset-II: Running Time	hr	17.00	21.61	14.20	17.60	15.25
4	Biogas Genset-II: Energy Generation	kW.hr	1934	2399	2016	2,116	1,922
5	Total.....2+4	kW.hr	4,676	4,947	4,570	4,731	4,188
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	61.56	66.33	59.62	62.50	56.94
3	Electricity Generation required as per Tender.....0.4 x 1000 x B2/100	kWH	246	265	238	250	228
4	Electricity generated..... (A2/A1) + (A4/A3)	kWH	253	235	287	258	258

4 BIOGAS FLARE:

Sr. No.	Parameter	Unit	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
1	<u>As per Tender:</u> The Biogas Flaring System shall strictly be used only in case of emergency and not as a routine practice.						
2	Operation Time	hr/day	7.63	7.28	6.42	7.11	7.02

5 EFFLUENT TREATMENT PLANT:

Sr. No.	Parameter	Unit	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
A Raw Effluent Quality:							
1	Flow	m ³ /day	40.58	40.81	64.41	48.60	56.54
2	pH	---	6.56	7.11	8.11	7.26	7.13
3	Biochemical Oxygen Demand (BOD5)	mg/l	2,347	1,609	1,695	1,884	1,982
4	Chemical Oxygen Demand (COD)	mg/l	4,905	4,763	3,458	4,375	4,776
5	Total Suspended Solids (TSS)	mg/l	3,591	2,349	2,237	2,726	3,107
6	Total Dissolve Solids (TDS)	mg/l	1,623	1,779	1,595	1,666	1,640
B Treated Effluent Quality:							
1	pH	---	7.22	7.44	7	7.22	7.17
2	Biochemical Oxygen Demand (BOD5)	mg/l	6	6	7	6	7
3	Chemical Oxygen Demand (COD)	mg/l	69	77	70	72	69
1	Total Suspended Solids (TSS)	mg/l	7	7	8	7	8
2	Total Dissolve Solids (TDS)	mg/l	1,737	1,868	1,707	1,771	1,723

6 DISPOSAL OF INERT:

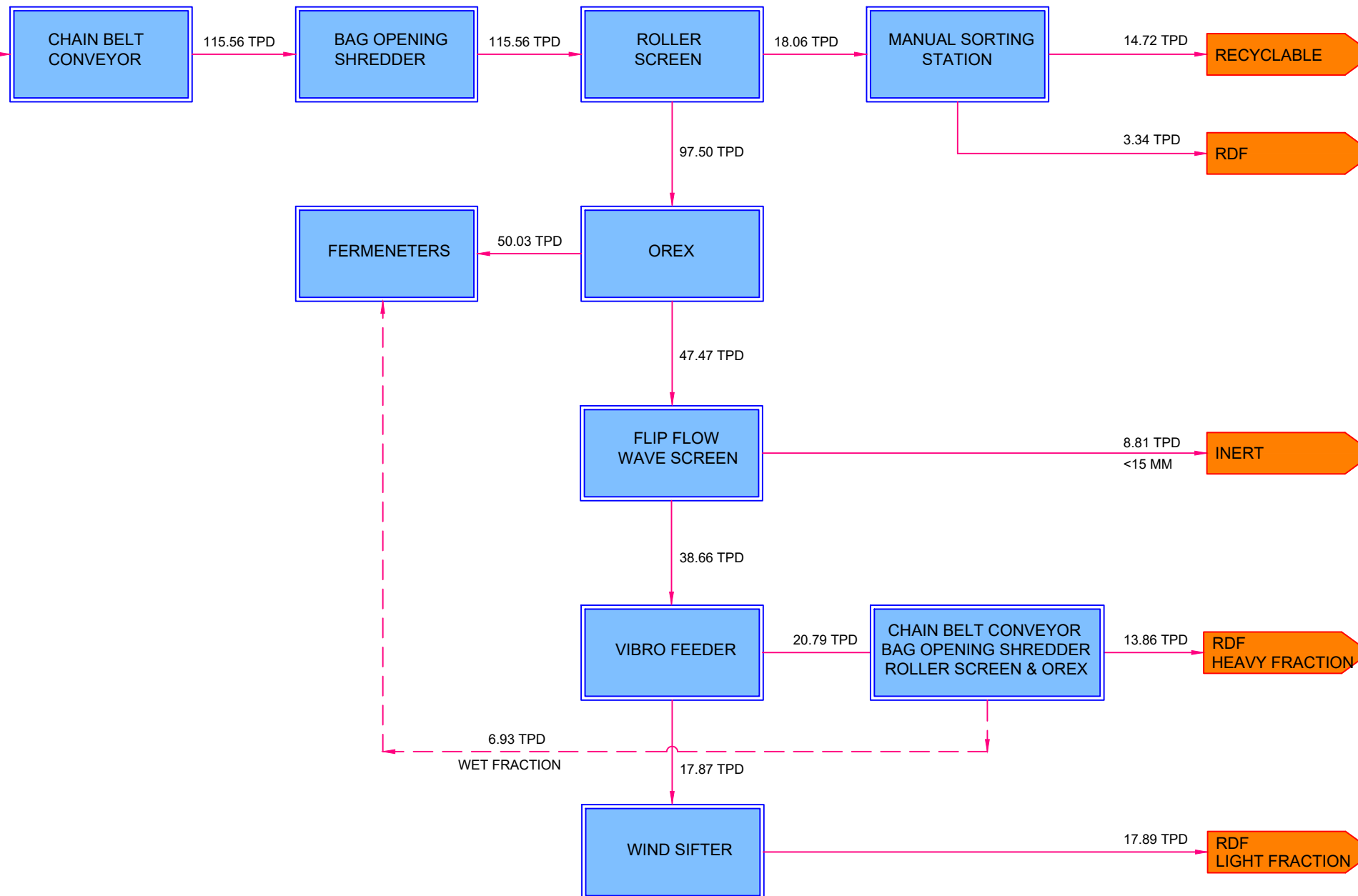
Sr. No.	Parameter	Unit	29-Dec	30-Dec	31-Dec	Weekly Average	Monthly Average
1	<u>As per Tender:</u> Maximum 10% of Inerts of the Total Input Waste (excluding Mulched Tree Waste) as received in the Facility.						
2	Input Waste	TPD	131.46	139.37	132.26	134.36	115.56
3	Inert Fraction	Kg	10,464	12,042	9,549	10,685	8,808
		TPD	10.46	12.04	9.55	10.68	8.81
4	% of Total Input Waste.....3/2	%	7.96%	8.64%	7.22%	7.94%	7.61%

7 HOUSEKEEPING:

Sr. No.	Parameter	Unit	29-Dec	30-Dec	31-Dec	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	14.72
2	RDF	35.04
3	WET FRACTION	56.99
4	INERT	8.81
TOTAL		115.56

NUMBER OF RECYCLABLE FRACTIONS		
Sr. No.	NAME	WEIGHT (KG)
1	PLASTIC FILM	5701
2	MULTI-LAYERED PLASTIC PACKS	0
3	HARD PLASTIC	433
4	PET	428
5	TETRAPACK	35
6	PAPER/CARDBOARD	2495
7	CLOTH/RAGS/TEXTILE	1707
8	JUTE BAGS	475
9	LDPE BAGS	0
10	GLASS	0
11	METALS	118
12	FOOTWEAR	0
13	LEATHER/RUBBER/REXINE	298
14	THERMOCAL	29
15	COCONUT	2998
TOTAL		14718



ANNEXURE -1: MASS BALANCE (DECEMBER 2016) 01-12-2016 TO 31-12-2016