



**PUBLIC WORKS**

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**MEMORANDUM**

**DATE** March 13, 2017

**TO:** Steve Morgan, Environmental Permitting Manager, FDEP  
Lance Kautz, Environmental Specialist I, FDEP

**FROM:** Larry Ruiz, Section Manager, Public Works, SWMD

**SUBJECT:** Hillsborough County Biosolids Composting Monthly Report: February 2017

Biosolids Received (wet tons):	1533.78 tons received 2/1 through 2/28
Source of Biosolids:	Hillsborough County Falkenburg AWWTP
Source of Bulking Agent:	Hillsborough County South County Yard Waste Processing Site
General Description of Activities:	All incoming biosolids were mixed with bulking agent and formed into windrows on the same day as received. 9 total windrows are in active composting as of 2/28/17. Windrow temperatures were monitored daily. 7 windrow has met temperature and time requirements of the Process to Further Reduce Pathogens (PFRP). 7 windrows have been turned. The previous 10 windrows have been moved to the curing section and combined for a total of 5 large windrows. No sampling or analysis was performed 600.45 tons of compost was sent to Life Soils.
Attachments:	A-N: Windrow construction and temperature records.

LER/rww  
Attachments

**CC:** Beth Schinella, Division Director, Utility Operations, PUD  
Kim Byer, Division Director, Solid Waste Management Division, PWD  
Ron Wiesman, Manager, Southeast County Landfill, PWD/SWMD

## Attachment A

<b>MSAP Process Temperature Chart Windrow# 17-1-7</b>																							
Temperature: Shading equals temperature 131 or greater for PFRP.																							
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn	
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"		
1	1/8/17																						
2	1/9/17	160	150	131	130	140	134	120	119	146	140	112	110	142	130	112	110	147	138.5	118.75	117.25		
3	1/10/17	162	158	142	136	158	158	138	126	158	148	128	126	150	144	130	128	157	152	134.5	129		
4	1/11/17	164	162	144	138	158	160	144	134	162	156	140	132	158	156	136	133	160.5	158.5	141	134.25		
5	1/12/17	162	164	150	144	160	160	156	148	162	164	156	146	162	163	150	148	161.5	162.75	153	146.5		
6	1/13/17	162	164	156	150	162	162	156	152	164	165	160	152	162	163	156	152	162.5	163.5	157	151.5		
7	1/14/17	161	164	158	152	163	164	158	152	165	166	162	156	163	163	158	154	163	164.25	159	153.5		
8	1/15/17																						
9	1/16/17	156	160	160	154	154	158	160	151	158	160	158	152	152	156	154	148	155	158.5	158	151.25		
10	1/17/17	156	159	161	152	155	158	160	150	158	160	158	150	156	162	160	146	156.25	159.75	159.75	149.5		
11	1/18/17	160	162	155	140	158	157	145	138	161	156	139	137	154	145	156	140	158.25	155	148.75	138.75		
12	1/19/17	166	164	144	138	154	152	133	132	153	154	138	133	156	147	148	136	157.25	154.25	140.75	134.75	Turn	
13	1/20/17	158	161	156	152	161	164	161	154	157	166	161	162	156	162	161	158	158	163.25	159.75	156.5		
14	1/21/17	156	158	156	153	148	151	154	150	146	150	154	156	150	154	154	155	150	153.25	154.5	153.5		
15	1/22/17																						
16	1/23/17	160	161	160	164	163	162	162	164	163	162	164	162	164	164	163	163	162.5	162.25	162.25	163.25		
17	1/24/17	150	160	162	164	160	163	162	163	159	160	160	159	157	160	161	161	156.5	160.75	161.25	161.75		
18	1/25/17	160	160	162	162	160	162	162	166	160	164	166	166	162	166	162	160	160.5	163	163	163.5		
19	1/26/17	162	168	156	160	157	156	158	162	154	158	146	162	151	143	160	160	156	156.25	155	161		
20	1/27/17	157	161	160	159	159	160	159	160	150	159	160	159	154	160	156	155	155	160	158.75	158.25		
21	1/28/17	155	160	160	159	159	161	159	156	149	158	160	150	154	160	156	155	154.25	159.75	158.75	155	Turn	
22	1/29/17																						
23	1/30/17	160	161	160	164	163	162	162	164	163	162	164	162	164	164	163	163	162.5	162.25	162.25	163.25		
24	1/31/17	160	160	162	168	160	162	162	166	160	164	166	166	162	166	168	166	160.5	163	164.5	166.5		
25	2/1/17	162	168	159	162	161	170	166	163	163	158	166	161	162	169	162	164	162	166.25	163.25	162.5		
26	2/2/17	157	165	163	160	158	168	164	161	161	163	165	160	159	164	154	160	158.75	165	161.5	160.25		
27	2/3/17	152	152	158	161	152	156	158	160	150	152	160	161	150	158	160	161	151	154.5	159	160.75		
28	2/4/17	140	151	158	160	141	158	160	158	148	158	162	163	142	148	160	163	142.75	153.75	160	161	Turn	
29	2/5/17																						
30	2/6/17	150	161	161	161	160	163	165	161	150	160	165	171	149	161	165	166	152.25	161.25	164	164.75		
31	2/7/17	150	160	161	161	160	163	164	160	152	164	169	170	150	160	164	165	153	161.75	164.5	164		

## Attachment B

<b>MSAP Process Temperature Chart Windrow# 17-1-11</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	1/12/17	158	152	136	130	159	154	144	140	160	154	148	142	158	146	132	128	158.75	151.5	140	135	
2	1/13/17	164	161	148	140	161	162	154	149	164	162	154	150	162	156	146	136	162.75	160.25	150.5	143.75	
3	1/14/17	164	162	150	144	166	164	156	150	160	164	160	156	158	162	148	142	162	163	153.5	148	
4	1/15/17																					
5	1/16/17	161	163	156	150	160	161	163	154	158	158	156	156	156	160	154	148	158.75	160.5	157.25	152	
6	1/17/17	162	160	160	152	160	158	160	160	156	160	162	160	154	158	160	152	158	159	160.5	156	
7	1/18/17	163	158	160	156	157	146	166	164	155	161	162	161	154	150	160	158	157.25	153.75	162	159.75	
8	1/19/17	156	159	161	161	154	162	170	169	159	163	166	166	156	161	164	163	156.25	161.25	165.25	164.75	
9	1/20/17	154	160	154	152	154	161	163	163	163	162	160	158	154	160	154	150	156.25	160.75	157.75	155.75	
10	1/21/17	154	150	155	160	154	151	160	160	159	151	153	158	150	158	160	160	154.25	152.5	157	159.5	
11	1/22/17																					
12	1/23/17	152	160	158	159	152	156	158	161	158	150	148	150	150	152	156	154	153	154.5	155	156	
13	1/24/17	156	161	159	158	152	157	150	144	157	150	140	138	150	149	140	132	153.75	154.25	147.25	143	
14	1/25/17	154	158	156	160	154	158	152	146	156	152	142	136	150	150	140	132	153.5	154.5	147.5	143.5	Turn
15	1/26/17	154	154	158	166	160	148	158	160	149	154	160	164	153	148	156	166	154	151	158	164	
16	1/27/17	150	165	170	171	152	164	170	171	152	160	170	172	158	164	174	175	153	163.25	171	172.25	
17	1/28/17	150	164	171	171	150	165	170	171	152	161	170	173	158	165	175	175	152.5	163.75	171.5	172.5	
18	1/29/17																					
19	1/30/17	161	163	162	156	160	164	165	158	161	165	162	159	161	170	164	159	160.75	165.5	163.25	158	Turn
20	1/31/17	160	162	160	158	165	170	167	162	158	164	165	162	156	164	165	160	159.75	165	164.25	160.5	
21	2/1/17	164	170	160	160	159	166	156	164	156	170	163	164	146	169	166	165	156.25	168.75	161.25	163.25	
22	2/2/17	154	166	163	162	152	165	163	160	146	166	164	165	148	165	166	162	150	165.5	164	162.25	
23	2/3/17	159	161	162	161	150	161	163	159	150	161	162	161	151	162	164	161	152.5	161.25	162.75	160.5	
24	2/4/17	150	160	160	162	152	158	153	150	140	158	162	161	146	158	162	160	147	158.5	159.25	158.25	
25	2/5/17																					
26	2/6/17	140	151	155	158	150	160	160	148	140	131	160	160	142	151	160	162	143	148.25	158.75	157	
27	2/7/17	140	142	156	158	142	140	159	156	136	132	160	160	149	151	158	162	141.75	141.25	158.25	159	
28	2/8/17	138	150	158	160	140	152	160	160	138	152	160	161	140	150	156	161	139	151	158.5	160.5	
29	2/9/17	139	150	155	161	142	152	160	161	138	152	161	161	138	137	156	160	139.25	147.75	158	160.75	
30	2/10/17	136	142	151	160	143	158	160	158	140	150	160	160	140	150	153	160	139.75	150	156	159.5	
31	2/11/17	139	145	151	160	145	159	161	158	140	152	161	160	139	153	155	161	140.75	152.25	157	159.75	
32	2/12/17																					
33	2/13/17	132	150	160	163	150	160	162	165	152	160	158	158	150	158	160	160	146	157	160	161.5	Turn
34	2/14/17	164	175	167	149	157	172	170	156	166	176	167	150	152	172	168	154	159.75	173.75	168	152.25	
35	2/15/17	153	171	164	147	146	170	166	158	170	174	171	161	156	174	166	161	156.25	172.25	166.75	156.75	
36	2/16/17	132	164	172	166	136	161	168	168	158	170	169	162	150	168	172	166	144	165.75	170.25	165.5	

## Attachment C

<b>MSAP Process Temperature Chart Windrow# 17-1-14</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	1/15/17																					
2	1/16/17	160	162	158	140	141	150	138	130	150	161	142	136	148	153	140	138	149.75	156.5	144.5	136	
3	1/17/17	152	144	139	144	157	135	140	132	156	147	148	140	160	154	142	140	156.25	145	142.25	139	
4	1/18/17	152	144	139	146	157	135	144	140	156	147	148	144	165	154	146	148	157.5	145	144.25	144.5	
5	1/19/17	150	144	146	148	154	148	148	146	152	149	150	146	162	156	148	148	154.5	149.25	148	147	
6	1/20/17	140	143	150	150	142	152	150	148	150	153	151	150	161	158	151	150	148.25	151.5	150.5	149.5	
7	1/21/17	150	146	150	151	148	151	152	148	152	158	151	149	158	152	148	150	152	151.75	150.25	149.5	
8	1/22/17																					
9	1/23/17	152	161	160	153	151	153	150	150	153	160	162	153	150	160	158	158	151.5	158.5	157.5	153.5	
10	1/24/17	150	157	158	149	154	152	156	148	156	159	154	137	150	150	148	140	152.5	154.5	154	143.5	
11	1/25/17	152	160	156	148	154	154	156	150	156	162	154	138	154	150	146	140	154	156.5	153	144	
12	1/26/17	155	163	156	147	155	155	156	152	156	166	154	139	155	149	140	138	155.25	158.25	151.5	144	
13	1/27/17	146	150	151	148	150	160	161	158	158	160	151	150	150	151	142	140	151	155.25	151.25	149	
14	1/28/17	140	149	151	148	150	159	161	160	158	160	151	150	150	152	141	141	149.5	155	151	149.75	
15	1/29/17																					
16	1/30/17	160	162	160	157	158	157	145	148	160	161	150	143	160	152	140	140	159.5	158	148.75	147	
17	1/31/17	161	158	160	158	154	159	152	144	160	165	158	152	156	158	146	140	157.75	160	154	148.5	
18	2/1/17	152	164	158	147	156	154	140	140	155	164	160	146	148	156	140	138	152.75	159.5	149.5	142.75	
19	2/2/17	159	164	154	144	141	152	139	138	151	163	154	138	152	157	140	136	150.75	159	146.75	139	
20	2/3/17	140	150	151	143	150	152	142	138	141	148	143	136	142	150	150	138	143.25	150	146.5	138.75	
21	2/4/17	132	142	150	143	140	150	150	138	140	151	153	140	133	140	142	138	136.25	145.75	148.75	139.75	
22	2/5/17																					
23	2/6/17	142	155	160	160	148	143	150	160	146	152	161	161	142	150	160	160	144.5	150	157.75	160.25	
24	2/7/17	141	158	160	160	150	148	151	158	146	155	161	161	140	150	161	162	144.25	152.75	158.25	160.25	
25	2/8/17	143	158	161	160	145	143	151	158	142	158	161	162	140	152	160	162	142.5	152.75	158.25	160.5	
26	2/9/17	141	160	161	160	142	145	151	158	140	158	161	162	140	151	160	162	140.75	153.5	158.25	160.5	
27	2/10/17	141	150	152	160	142	150	150	151	141	142	161	162	141	140	160	164	141.25	145.5	155.75	159.25	
28	2/11/17	140	151	151	160	141	150	150	151	140	141	161	163	140	140	160	168	140.25	145.5	155.5	160.5	
29	2/12/17																					
30	2/13/17	158	161	162	161	153	160	160	158	150	160	162	163	142	160	163	170	150.75	160.25	161.75	163	
31	2/14/17	164	151	168	160	164	172	169	157	166	168	160	164	167	168	160	166	165.25	164.75	164.25	161.75	
32	2/15/17	156	144	157	161	153	161	167	163	150	165	171	166	148	162	166	159	151.75	158	165.25	162.25	
33	2/16/17	149	145	145	149	144	148	148	152	142	146	160	166	156	163	165	159	147.75	150.5	154.5	156.5	
34	2/17/17	140	148	150	153	150	140	142	152	152	161	162	162	153	158	160	162	148.75	151.75	153.5	157.25	
35	2/18/17	138	148	152	155	150	140	142	155	150	160	165	162	155	158	160	162	148.25	151.5	154.75	158.5	
36	2/19/17																					
37	2/20/17	130	146	164	168	148	164	165	164	146	154	163	170	160	162	164	165	146	156.5	164	166.75	

## Attachment D

<b>MSAP Process Temperature Chart Windrow# 17-1-19</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	1/20/17	150	140	120	120	132	122	118	115	140	138	122	120	141	120	118	115	140.75	130	119.5	117.5	
2	1/21/17	150	141	131	130	138	140	130	128	146	140	128	122	145	131	126	121	144.75	138	128.75	125.25	
3	1/22/17																					
4	1/23/17	156	148	146	136	150	146	134	130	150	147	138	128	151	139	135	126	151.75	145	138.25	130	
5	1/24/17	150	151	151	141	150	144	138	131	152	150	141	138	150	140	140	132	150.5	146.25	142.5	135.5	
6	1/25/17	150	156	150	141	151	148	146	132	156	151	140	138	155	148	145	136	153	150.75	145.25	136.75	
7	1/26/17	151	160	142	140	152	150	150	132	157	154	138	138	157	153	146	138	154.25	154.25	144	137	
8	1/27/17	143	145	143	142	143	144	140	140	141	144	140	139	151	152	148	140	144.5	146.25	142.75	140.25	
9	1/28/17	143	145	141	140	143	145	140	140	141	145	140	139	150	152	150	140	144.25	146.75	142.75	139.75	
10	1/29/17																					
11	1/30/17	152	158	151	149	155	164	167	165	160	161	158	150	155	158	149	141	155.5	160.25	156.25	151.25	
12	1/31/17	150	159	159	155	153	161	166	165	156	160	160	152	150	155	152	148	152.25	158.75	159.25	155	
13	2/1/17	146	166	155	143	148	164	162	150	158	162	156	145	158	156	139	146	152.5	162	153	146	
14	2/2/17	142	167	158	144	144	164	161	150	154	162	158	146	156	158	140	142	149	162.75	154.25	145.5	
15	2/3/17	140	162	158	142	141	158	160	148	152	160	160	148	156	160	142	136	147.25	160	155	143.5	
16	2/4/17	156	158	160	152	150	160	160	156	150	160	160	160	160	162	156	152	154	160	159	155	Turn
17	2/5/17																					
18	2/6/17	149	155	160	160	150	155	160	161	155	162	165	161	158	160	155	150	153	158	160	158	
19	2/7/17	148	158	160	160	152	158	162	162	156	161	164	162	156	161	162	158	153	159.5	162	160.5	
20	2/8/17	146	158	161	161	148	158	162	162	154	160	162	162	152	160	162	161	150	159	161.75	161.5	
21	2/9/17	141	158	161	161	144	159	161	161	154	160	161	161	148	160	161	162	146.75	159.25	161	161.25	
22	2/10/17	140	158	161	162	142	160	161	160	152	158	160	160	141	158	160	162	143.75	158.5	160.5	161	
23	2/11/17	140	158	161	162	141	160	161	161	150	160	160	160	141	155	155	162	143	158.25	159.25	161.25	
24	2/12/17																					
25	2/13/17	141	150	153	153	140	151	158	160	143	160	161	163	145	158	161	161	142.25	154.75	158.25	159.25	
26	2/14/17	143	148	145	143	144	144	136	136	144	148	143	140	149	150	142	144	145	147.5	141.5	140.75	Turn
27	2/15/17	152	163	157	164	161	161	168	167	160	162	162	168	144	161	154	157	154.25	161.75	160.25	164	
28	2/16/17	145	165	167	164	146	163	170	166	140	164	173	171	140	166	169	159	142.75	164.5	169.75	165	
29	2/17/17	142	163	153	153	142	162	168	170	140	160	170	170	150	161	168	170	143.5	161.5	164.75	165.75	
30	2/18/17	140	163	153	150	142	161	170	170	141	160	172	170	150	161	170	170	143.25	161.25	166.25	165	Turn
31	2/19/17																					
32	2/20/17	136	152	165	171	143	164	173	171	150	158	168	172	150	165	170	171	144.75	159.75	169	171.25	
33	2/21/17	134	152	164	170	145	164	172	171	146	158	166	171	146	162	168	170	142.75	159	167.5	170.5	
34	2/22/17	132	153	164	168	149	164	170	171	144	160	164	170	143	159	166	168	142	159	166	169.25	

## Attachment E

<b>MSAP Process Temperature Chart Windrow# 17-1-23</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	1/24/17	150	132	125	120	161	160	152	110	144	138	128	123	140	132	123	117	148.75	140.5	132	117.5	
2	1/25/17	161	168	148	129	160	163	152	119	161	168	155	126	146	159	130	122	157	164.5	146.25	124	
3	1/26/17	164	170	152	131	161	162	143	127	161	169	146	130	147	163	134	126	158.25	166	143.75	128.5	
4	1/27/17	160	163	164	148	143	161	164	150	142	162	161	140	160	163	163	146	151.25	162.25	163	146	
5	1/28/17	159	161	164	156	143	161	165	158	142	160	161	150	160	163	164	151	151	161.25	163.5	153.75	
6	1/29/17																					
7	1/30/17	158	161	160	160	135	155	161	163	150	160	161	159	138	150	155	150	145.25	156.5	159.25	158	
8	1/31/17	156	161	160	160	140	156	160	161	155	161	165	163	140	155	161	161	147.75	158.25	161.5	161.25	
9	2/1/17	144	170	150	160	158	162	142	162	146	170	150	161	147	168	154	162	148.75	167.5	149	161.25	
10	2/2/17	150	164	148	161	149	160	145	162	147	167	155	160	153	167	156	161	150	164.5	151	161	
11	2/3/17	155	158	150	160	150	158	161	160	150	150	150	160	160	160	160	161	153.75	156.5	155.25	160.25	
12	2/4/17	158	161	160	160	151	162	162	158	160	163	161	158	158	161	162	161	156.75	161.75	161.25	159.25	
13	2/5/17																					
14	2/6/17	150	160	164	165	148	159	160	158	154	158	161	160	146	155	163	162	149.5	158	162	161.25	
15	2/7/17	150	158	164	164	146	158	160	158	152	156	160	160	146	152	162	162	148.5	156	161.5	161	
16	2/8/17	152	157	165	164	148	159	161	160	153	158	164	163	146	152	163	161	149.75	156.5	163.25	162	
17	2/9/17	154	156	165	165	150	160	163	162	153	158	166	165	146	151	164	161	150.75	156.25	164.5	163.25	
18	2/10/17	154	155	164	164	148	158	162	162	151	156	164	164	145	150	162	161	149.5	154.75	163	162.75	
19	2/11/17	151	156	160	162	149	161	162	160	153	157	163	164	147	152	163	163	150	156.5	162	162.25	
20	2/12/17																					
21	2/13/17	142	152	157	161	144	154	161	164	144	150	159	159	142	152	158	161	143	152	158.75	161.25	
22	2/14/17	143	156	163	162	140	154	161	161	136	150	158	160	136	150	159	161	138.75	152.5	160.25	161	
23	2/15/17	144	156	161	162	142	156	161	160	132	148	160	161	140	152	160	160	139.5	153	160.5	160.75	Turn
24	2/16/17	160	166	158	154	150	152	156	154	150	152	152	150	148	150	151	152	152	155	154.25	152.5	
25	2/17/17	158	165	164	158	155	156	158	156	155	155	156	156	155	158	158	156	155.75	158.5	159	156.5	
26	2/18/17	157	164	167	163	160	164	160	158	158	163	160	158	160	164	164	160	158.75	163.75	162.75	159.75	
27	2/19/17																					
28	2/20/17	154	161	165	165	152	161	163	164	156	161	164	164	152	158	162	161	153.5	160.25	163.5	163.5	Turn
29	2/21/17	168	170	158	154	168	170	162	156	162	168	160	156	163	165	161	154	165.25	168.25	160.25	155	
30	2/22/17	165	168	160	160	166	168	164	162	164	168	162	160	170	170	165	160	166.25	168.5	162.75	160.5	
31	2/23/17	155	160	166	166	160	165	168	165	162	165	170	170	165	168	166	163	160.5	164.5	167.5	166	
32	2/24/17	150	160	166	168	152	160	166	168	144	158	165	167	144	159	170	170	147.5	159.25	166.75	168.25	
33	2/25/17	146	155	170	170	150	158	170	170	144	155	170	170	144	156	170	172	146	156	170	170.5	
34	2/26/17																					
35	2/27/17	137	151	170	177	140	141	171	176	136	149	174	176	133	163	172	172	136.5	151	171.75	175.25	

## Attachment F

<b>MSAP Process Temperature Chart Windrow# 17-1-28</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	1/29/17																					
2	1/30/17	159	157	139	122	158	162	147	134	161	154	140	128	142	137	124	113	155	152.5	137.5	124.25	
3	1/31/17	163	162	148	131	161	165	150	138	162	161	148	130	158	146	134	128	161	158.5	145	131.75	
4	2/1/17	155	168	162	152	154	165	160	140	161	152	139	136	161	160	143	133	157.75	161.25	151	140.25	
5	2/2/17	160	161	165	156	156	165	158	135	154	155	143	134	148	155	162	146	154.5	159	157	142.75	
6	2/3/17	141	150	158	152	141	150	150	150	140	150	151	150	135	139	142	142	139.25	147.25	150.25	148.5	
7	2/4/17	157	161	160	158	158	163	164	160	153	160	166	164	147	153	162	156	153.75	159.25	163	159.5	
8	2/5/17																					
9	2/6/17	152	158	162	164	146	156	162	164	150	156	164	165	144	152	162	164	148	155.5	162.5	164.25	
10	2/7/17	150	156	162	163	146	155	162	163	148	156	164	164	144	151	162	162	147	154.5	162.5	163	
11	2/8/17	146	156	163	163	139	155	163	164	150	157	164	164	144	153	164	165	144.75	155.25	163.5	164	
12	2/9/17	144	156	163	164	136	156	166	166	152	158	164	164	144	152	166	167	144	155.5	164.75	165.25	
13	2/10/17	142	155	162	163	134	155	165	164	150	156	164	162	144	150	164	165	142.5	154	163.75	163.5	
14	2/11/17	144	154	161	164	134	151	163	167	151	157	164	166	146	152	161	165	143.75	153.5	162.25	165.5	
15	2/12/17																					
16	2/13/17	140	143	151	157	140	150	151	152	142	151	159	160	142	153	160	158	141	149.25	155.25	156.75	
17	2/14/17	140	160	156	145	152	162	158	148	155	162	156	150	136	151	158	156	145.75	158.75	157	149.75	
18	2/15/17	137	161	154	145	142	162	159	154	152	160	157	151	142	152	159	148	143.25	158.75	157.25	149.5	
19	2/16/17	142	145	162	157	148	146	160	158	150	161	160	156	141	168	161	157	145.25	155	160.75	157	
20	2/17/17	152	160	162	162	150	151	160	161	150	152	160	161	140	158	161	162	148	155.25	160.75	161.5	Turn
21	2/18/17	150	160	162	162	150	151	161	161	150	152	160	162	141	158	160	165	147.75	155.25	160.75	162.5	
22	2/19/17																					
23	2/20/17	140	160	168	174	163	169	174	175	147	162	169	170	163	169	170	176	153.25	165	170.25	173.75	
24	2/21/17	148	161	162	170	163	171	175	176	144	160	169	172	158	166	172	174	153.25	164.5	169.5	173	
25	2/22/17	132	158	162	169	156	170	173	175	141	166	168	174	151	166	172	175	145	165	168.75	173.25	
26	2/23/17	132	146	151	165	144	163	168	173	133	148	163	170	134	160	162	171	135.75	154.25	161	169.75	
27	2/24/17	158	162	172	172	160	162	168	166	156	163	170	170	160	165	172	170	158.5	163	170.5	169.5	Turn
28	2/25/17	157	162	172	172	158	161	170	169	155	162	170	170	160	164	172	171	157.5	162.25	171	170.5	
29	2/26/17																					
30	2/27/17	154	161	167	168	158	160	162	168	154	160	150	165	142	161	170	166	152	160.5	162.25	166.75	
31	2/28/17	157	161	169	177	154	160	165	174	153	159	171	174	145	162	173	178	152.25	160.5	169.5	175.75	

## Attachment G

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 17-2-1	
Windrow Construction:			Date Commenced: 1-30-17		Date Completed: 2-1-17	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
1/30/17	Oscar Ochoa	21.88	28.44	56.00		
1/30/17	Oscar Ochoa	20.59	26.77	56.00		
1/30/17	Oscar Ochoa	22.13	28.77	56.00	44.00	
1/31/17	Oscar Ochoa	21.65	28.15	56.00		
1/31/17	Oscar Ochoa	22.08	28.70	56.00		
1/31/17	Oscar Ochoa	23.45	30.49	56.00	44.00	
2/1/17	Mike Bayne	23.49	30.54	56.00		
2/1/17	Mike Bayne	22.21	28.87	56.00		
2/1/17	Mike Bayne	22.38	29.09	56.00	44.00	
<b>Totals</b>		199.86	259.82	504.00	132.00	0.00
<b>Windrow Construction ratio:</b>		2.45 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-1</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/2/17	160	150	131	130	140	134	120	119	146	140	112	110	142	130	112	110	147	138.5	118.75	117.25	
2	2/3/17	162	158	142	136	158	158	138	126	158	148	128	126	150	144	130	128	157	152	134.5	129	
3	2/4/17	164	162	144	138	158	160	144	134	162	156	140	132	158	156	136	130	160.5	158.5	141	133.5	
4	2/5/17																					
5	2/6/17	150	155	160	160	150	156	160	162	158	164	165	161	155	160	148	150	153.25	158.75	158.25	158.25	
6	2/7/17	140	152	159	158	150	159	160	140	160	160	158	150	160	160	160	158	152.5	157.75	159.25	151.5	
7	2/8/17	138	138	141	143	143	160	160	160	133	138	150	153	132	141	150	151	136.5	144.25	150.25	151.75	
8	2/9/17	135	138	142	144	141	160	160	160	138	140	150	155	136	142	150	151	137.5	145	150.5	152.5	
9	2/10/17	136	135	140	140	134	138	140	140	140	141	143	152	140	140	142	142	137.5	138.5	141.25	143.5	
10	2/11/17	132	135	140	140	134	138	140	141	141	142	144	150	140	140	141	142	136.75	138.75	141.25	143.25	
11	2/12/17																					
12	2/13/17	143	158	160	161	150	160	161	161	150	158	160	161	138	150	161	162	145.25	156.5	160.5	161.25	
13	2/14/17	141	145	159	152	151	164	152	138	163	164	152	140	152	161	156	148	151.75	158.5	154.75	144.5	
14	2/15/17	140	142	160	148	146	152	154	141	158	165	158	140	146	158	150	137	147.5	154.25	155.5	141.5	
15	2/16/17	140	146	142	151	145	153	156	150	152	164	164	154	140	149	158	155	144.25	153	155	152.5	
16	2/17/17	140	151	158	160	143	160	162	160	150	160	161	160	140	154	163	160	143.25	156.25	161	160	
17	2/18/17	138	151	158	162	143	160	162	160	150	161	164	160	138	154	160	160	142.25	156.5	161	160.5	
18	2/19/17																					
19	2/20/17	136	148	156	162	140	161	162	154	143	166	164	153	144	160	158	152	140.75	158.75	160	155.25	
20	2/21/17	136	146	149	162	138	154	164	158	135	164	164	157	135	159	160	152	136	155.75	159.25	157.25	Turn
21	2/22/17	145	148	162	160	156	160	160	153	158	162	161	152	149	153	160	154	152	155.75	160.75	154.75	
22	2/23/17	150	160	155	161	148	151	159	153	150	162	161	156	156	150	164	161	151	155.75	159.75	157.75	
23	2/24/17	136	137	158	161	136	160	160	161	140	150	160	160	150	142	158	160	140.5	147.25	159	160.5	
24	2/25/17	138	140	160	161	136	150	161	161	140	151	160	162	136	142	160	160	137.5	145.75	160.25	161	Turn
25	2/26/17																					
26	2/27/17	144	162	172	172	144	169	172	165	159	169	172	171	163	168	168	166	152.5	167	171	168.5	
27	2/28/17	155	166	171	170	146	162	168	167	141	166	171	170	154	165	170	167	149	164.75	170	168.5	



## Attachment H

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 17-2-4		
Windrow Construction:			Date Commenced: 2-2-17		Date Completed: 2-4-17	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/2/17	Mike Bayne	23.22	30.19	56.00		
2/2/17	Mike Bayne	22.67	29.47	56.00		
2/2/17	Mike Bayne	23.07	29.99	56.00	44.00	
2/3/17	Jerry Devoe	22.72	29.54	56.00		
2/3/17	Jerry Devoe	21.62	28.11	56.00		
2/3/17	Jerry Devoe	23.56	30.63	56.00	44.00	
2/4/17	Oscar Ochoa	23.14	30.08	56.00		
2/4/17	Oscar Ochoa	22.14	28.78	56.00		
2/4/17	Oscar Ochoa	21.61	28.09	56.00	44.00	
Totals		203.75	264.88	504.00	132.00	0.00
Windrow Construction ratio:		2.40 /1				
Note: Yard waste yards = number of buckets * 4.00						

MSAP Process Temperature Chart Windrow# 17-2-4																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/5/17																					
2	2/6/17	140	152	159	159	149	158	166	142	160	160	160	150	161	160	160	160	152.5	157.5	161.25	152.75	
3	2/7/17	151	160	161	161	160	163	164	160	152	164	169	170	150	160	164	165	153.25	161.75	164.5	164	
4	2/8/17	142	150	151	150	153	158	150	140	142	151	152	143	138	150	158	160	143.75	152.25	152.75	148.25	
5	2/9/17	140	150	151	150	150	160	150	140	142	151	152	143	140	150	160	162	143	152.75	153.25	148.75	
6	2/10/17	136	142	158	160	138	142	151	151	140	145	151	153	138	142	143	150	138	142.75	150.75	153.5	
7	2/11/17	136	140	158	161	136	141	150	150	141	143	151	153	136	140	143	150	137.25	141	150.5	153.5	
8	2/12/17																					
9	2/13/17	148	158	161	160	153	160	160	158	151	160	161	160	140	158	158	161	148	159	160	159.75	
10	2/14/17	146	158	159	148	150	153	156	143	145	150	134	160	150	170	159	140	147.75	157.75	152	147.75	
11	2/15/17	146	162	154	139	150	160	154	138	151	150	134	160	142	166	153	136	147.25	159.5	148.75	143.25	
12	2/16/17	140	148	160	153	146	162	157	144	146	155	149	160	138	160	162	150	142.5	156.25	157	151.75	
13	2/17/17	136	152	160	160	142	158	160	161	143	153	153	160	136	151	160	161	139.25	153.5	158.25	160.5	
14	2/18/17	136	150	160	160	145	158	160	161	140	150	155	160	136	151	160	161	139.25	152.25	158.75	160.5	
15	2/19/17																					
16	2/20/17	132	153	162	156	140	156	160	151	140	160	154	144	140	160	165	155	138	157.25	160.25	151.5	
17	2/21/17	131	160	163	155	136	161	162	155	138	156	158	152	132	156	165	158	134.25	158.25	162	155	Turn
18	2/22/17	138	164	163	153	137	161	160	152	144	160	154	143	134	160	162	151	138.25	161.25	159.75	149.75	
19	2/23/17	146	150	164	158	148	160	159	148	152	157	150	144	138	148	161	156	146	153.75	158.5	151.5	
20	2/24/17	143	151	152	160	151	160	161	161	141	151	153	152	140	150	153	160	143.75	153	154.75	158.25	
21	2/25/17	140	150	152	160	151	160	161	161	141	151	155	152	140	148	150	161	143	152.25	154.5	158.5	
22	2/26/17																					
23	2/27/17	150	168	176	176	152	140	160	170	144	131	148	165	136	145	153	161	145.5	146	159.25	168	Turn
24	2/28/17	153	165	172	173	153	169	171	168	148	167	172	172	136	164	170	166	147.5	166.25	171.25	169.75	

## Attachment I

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 17-2-9		
Windrow Construction:			Date Commenced: 2-6-17		Date Completed: 2-9-17	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/6/17	Oscar Ochoa	21.64	28.13	56.00		
2/6/17	Oscar Ochoa	22.13	28.77	56.00		
2/6/17	Oscar Ochoa	21.63	28.12	56.00	44.00	
2/7/17	Oscar Ochoa	22.75	29.58	56.00		
2/7/17	Oscar Ochoa	21.79	28.33	56.00		
2/7/17	Oscar Ochoa	22.34	29.04	56.00	44.00	
2/8/17	Oscar Ochoa	22.39	29.11	56.00		
2/8/17	Oscar Ochoa	22.89	29.76	56.00		
2/9/17	Jerry Devoe	22.44	29.17	56.00	44.00	
Totals		200.00	260.00	504.00	132.00	0.00
Windrow Construction ratio:		2.45 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-9</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/10/17	150	145	139	136	161	155	145	138	155	151	142	132	151	151	142	130	154.25	150.5	142	134	
2	2/11/17	152	145	140	140	162	155	145	141	155	150	140	136	150	150	142	136	154.75	150	141.75	138.25	
3	2/12/17																					
4	2/13/17	150	152	158	146	143	151	160	141	150	152	158	138	150	158	160	142	148.25	153.25	159	141.75	
5	2/14/17	161	155	132	150	165	169	156	141	158	161	149	140	153	164	158	156	159.25	162.25	148.75	146.75	
6	2/15/17	159	160	136	152	164	163	158	142	146	159	155	144	138	156	160	156	151.75	159.5	152.25	148.5	
7	2/16/17	132	132	156	156	156	144	152	150	157	157	152	152	134	149	159	157	144.75	145.5	154.75	153.75	
8	2/17/17	134	150	160	161	150	160	162	161	140	142	158	160	151	160	160	160	143.75	153	160	160.5	
9	2/18/17	136	150	161	161	152	161	160	160	145	142	158	160	150	160	160	160	145.75	153.25	159.75	160.25	
10	2/19/17																					
11	2/20/17	146	163	154	144	163	168	162	154	150	160	158	152	150	164	160	155	152.25	163.75	158.5	151.25	
12	2/21/17	145	163	163	152	149	162	163	157	146	156	158	156	148	162	160	155	147	160.75	161	155	
13	2/22/17	134	161	161	150	140	161	160	152	138	152	158	155	144	159	160	152	139	158.25	159.75	152.25	
14	2/23/17	144	165	162	153	133	153	158	154	150	155	158	158	132	142	159	159	139.75	153.75	159.25	156	
15	2/24/17	150	160	163	163	136	158	160	162	142	158	160	161	136	143	153	160	141	154.75	159	161.5	
16	2/25/17	150	157	161	165	136	160	160	162	144	160	160	161	136	140	151	160	141.5	154.25	158	162	
17	2/26/17																					
18	2/27/17	138	162	162	156	132	154	160	157	140	142	156	158	139	145	158	159	137.25	150.75	159	157.5	Turn
19	2/28/17	150	157	159	163	142	146	159	159	152	148	153	159	152	158	158	160	149	152.25	157.25	160.25	

## Attachment J

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 17-2-13	
Windrow Construction:			Date Commenced: 2-9-17	Date Completed: 2-13-17		
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/9/17	Oscar Ochoa	22.74	29.56	56.00		
2/9/17	Oscar Ochoa	22.48	29.22	56.00	24.00	
2/10/17	Oscar Ochoa	22.36	29.07	56.00		
2/10/17	Oscar Ochoa	22.18	28.83	56.00		
2/10/17	Oscar Ochoa	22.39	29.11	56.00	44.00	
2/11/17	Oscar Ochoa	22.33	29.03	56.00		
2/11/17	Oscar Ochoa	22.21	28.87	56.00		
2/11/17	Oscar Ochoa	21.70	28.21	56.00	44.00	
2/13/17	Oscar Ochoa	22.26	28.94	56.00	24.00	
Totals		200.65	260.85	504.00	136.00	0.00
Windrow Construction ratio:		2.45 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-13</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/14/17	150	133	119	113	146	132	113	106	148	128	107	98	138	123	104	94	145.5	129	110.75	102.75	
2	2/15/17	156	136	122	115	145	131	115	113	156	128	109	99	148	136	112	98	151.25	132.75	114.5	106.25	
3	2/16/17	152	153	138	129	157	147	128	120	157	155	138	117	161	150	137	114	156.75	151.25	135.25	120	
4	2/17/17	150	150	158	138	143	158	160	134	160	142	151	132	143	158	160	132	149	152	157.25	134	
5	2/18/17	146	150	158	140	141	160	160	138	158	142	150	136	143	156	160	140	147	152	157	138.5	
6	2/19/17																					
7	2/20/17	158	165	154	142	142	159	149	140	158	164	157	140	156	163	151	142	153.5	162.75	152.75	141	
8	2/21/17	160	166	157	146	146	162	158	149	154	162	156	144	150	162	151	148	152.5	163	155.5	146.75	
9	2/22/17	160	162	152	148	155	159	149	150	151	161	153	148	144	161	152	152	152.5	160.75	151.5	149.5	
10	2/23/17	143	160	155	148	132	157	156	156	152	164	155	150	160	165	152	156	146.75	161.5	154.5	152.5	
11	2/24/17	140	158	161	162	136	142	160	161	136	143	140	156	136	158	160	161	137	150.25	155.25	160	
12	2/25/17	141	160	161	161	136	140	160	161	136	140	160	160	136	160	160	161	137.25	150	160.25	160.75	
13	2/26/17																					
14	2/27/17	158	164	162	157	138	155	162	158	142	158	162	158	135	162	163	150	143.25	159.75	162.25	155.75	
15	2/28/17	153	164	163	159	142	160	161	156	158	165	160	156	141	159	164	156	148.5	162	162	156.75	

## Attachment K

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 17-2-16	
Windrow Construction:			Date Commenced: 2-13-17	Date Completed: 2-16-17		
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/13/17	Oscar Ochoa	23.31	30.30	56.00	12.00	
2/14/17	Mike Bayne	22.31	29.00	56.00		
2/14/17	Mike Bayne	22.51	29.26	56.00		
2/14/17	Mike Bayne	22.59	29.37	56.00	44.00	
2/15/17	Mike Bayne	21.56	28.03	56.00		
2/15/17	Mike Bayne	20.64	26.83	56.00		
2/15/17	Mike Bayne	22.71	29.52	56.00	44.00	
2/16/17	Mike Bayne	22.45	29.19	56.00		
2/16/17	Mike Bayne	22.90	29.77	56.00	40.00	
<b>Totals</b>		200.98	261.27	504.00	140.00	0.00
<b>Windrow Construction ratio:</b>		2.46 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-16</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/17/17	140	140	138	136	140	142	131	128	140	136	132	130	140	150	145	132	140	142	136.5	131.5	
2	2/18/17	156	152	140	136	145	140	144	141	141	138	141	140	140	150	160	142	145	145	146.25	139.75	
3	2/19/17																					
4	2/20/17	140	145	144	140	144	140	146	146	140	152	146	148	150	155	152	149	143.5	148	147	145.75	
5	2/21/17	140	146	150	148	143	148	148	145	144	155	158	150	148	160	154	150	143.75	152.25	152.5	148.25	
6	2/22/17	138	138	152	152	142	152	150	150	144	158	152	152	146	153	152	156	142.5	150.25	151.5	152.5	
7	2/23/17	136	149	154	156	142	158	156	156	142	158	157	158	152	156	151	158	143	155.25	154.5	157	
8	2/24/17	140	158	160	161	140	150	158	160	140	150	160	161	148	152	160	158	142	152.5	159.5	160	
9	2/25/17	140	160	160	161	140	152	160	161	140	152	161	161	141	150	162	160	140.25	153.5	160.75	160.75	
10	2/26/17																					
11	2/27/17	160	165	156	160	132	162	155	161	158	151	161	160	153	160	158	160	150.75	159.5	157.5	160.25	
12	2/28/17	161	164	159	161	139	164	161	161	157	157	160	160	150	160	157	162	151.75	161.25	159.25	161	

## Attachment L

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 17-2-20	
Windrow Construction:			Date Commenced: 2-17-17		Date Completed: 2-20-17	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/17/17	Oscar Ochoa	19.18	24.93	56.00		
2/17/17	Oscar Ochoa	22.66	29.46	56.00		
2/17/17	Oscar Ochoa	21.84	28.39	56.00	44.00	
2/18/17	Jerry Devoe	20.03	26.04	56.00		
2/18/17	Jerry Devoe	21.82	28.37	56.00		
2/18/17	Jerry Devoe	20.64	26.83	56.00	44.00	
2/20/17	Oscar Ochoa	22.62	29.41	56.00		
2/20/17	Oscar Ochoa	23.02	29.93	56.00		
2/20/17	Oscar Ochoa	22.42	29.15	56.00	48.00	
<b>Totals</b>		194.23	252.50	504.00	136.00	0.00
<b>Windrow Construction ratio:</b>		2.53 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-20</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/21/17	152	148	126	112	138	122	116	112	150	130	110	95	118	116	100	96	139.5	129	113	103.75	
2	2/22/17	161	149	132	128	142	125	121	120	155	134	117	97	126	121	106	100	146	132.25	119	111.25	
3	2/23/17	152	157	151	136	151	147	132	124	164	158	131	110	131	138	125	108	149.5	150	134.75	119.5	
4	2/24/17	163	160	152	136	161	162	160	142	161	160	150	138	158	158	140	1	160.75	160	150.5	104.25	
5	2/25/17	160	160	152	136	160	162	161	140	161	162	151	147	153	158	140	140	158.5	160.5	151	140.75	
6	2/26/17																					
7	2/27/17	158	172	170	164	148	165	159	155	144	161	161	156	160	160	154	134	152.5	164.5	161	152.25	
8	2/28/17	151	168	168	165	156	167	155	150	154	166	162	158	162	162	152	136	155.75	165.75	159.25	152.25	

## Attachment M

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 17-2-23		
Windrow Construction:			Date Commenced: 2-21-17		Date Completed: 2-23-17	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/21/17	Oscar Ochoa	23.24	30.21	56.00		
2/21/17	Oscar Ochoa	20.37	26.48	56.00		
2/21/17	Oscar Ochoa	22.47	29.21	56.00	44.00	
2/22/17	Mike Bayne	22.06	28.68	56.00		
2/22/17	Mike Bayne	22.87	29.73	56.00		
2/22/17	Mike Bayne	21.58	28.05	56.00	44.00	
2/23/17	Mike Bayne	22.06	28.68	56.00		
2/23/17	Mike Bayne	22.87	29.73	56.00		
2/23/17	Mike Bayne	21.58	28.05	56.00	48.00	
<b>Totals</b>		199.10	258.83	504.00	136.00	0.00
<b>Windrow Construction ratio:</b>		2.47 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-23</b>																						
Temperature: Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/24/17	150	131	101	97	150	133	98	94	134	95	89	88	131	97	90	102	141.25	114	94.5	95.25	
2	2/25/17	150	140	130	112	156	148	126	116	148	136	101	99	142	132	108	112	149	139	116.25	109.75	
3	2/26/17	156	144	134	118	155	152	138	126	151	140	118	110	150	140	121	116	153	144	127.75	117.5	
4	2/27/17	158	148	136	128	152	154	148	136	152	145	128	118	152	145	139	118	153.5	148	137.75	125	
5	2/28/17	162	154	140	133	152	152	152	140	154	156	144	132	155	156	142	131	155.75	154.5	144.5	134	

## Attachment N

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 17-2-27		
Windrow Construction:			Date Commenced: 2-24-17		Date Completed: 2-27-17	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
2/24/17	Oscar Ochoa	22.51	29.26	56.00		
2/24/17	Oscar Ochoa	23.51	30.56	56.00		
2/24/17	Oscar Ochoa	22.38	29.09	56.00	44.00	
2/25/17	Jerry Devoe	21.03	27.34	56.00		
2/25/17	Jerry Devoe	20.14	26.18	56.00		
2/25/17	Jerry Devoe	20.85	27.11	56.00	44.00	
2/27/17	Oscar Ochoa	22.40	29.12	56.00		
2/27/17	Oscar Ochoa	22.68	29.48	56.00		
2/27/17	Oscar Ochoa	21.29	27.68	56.00	48.00	
<b>Totals</b>		196.79	255.83	504.00	136.00	0.00
<b>Windrow Construction ratio:</b>		2.50 /1				
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 17-2-27</b>																						
<b>Temperature:</b> Shading equals temperature 131 or greater for PFRP.																						
Days	Date	Point 1				Point 2				Point 3				Point 4				Average				Turn
		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10"	20"	30"	40"	
1	2/28/17	163	162	150	131	153	166	157	143	159	161	144	126	130	112	100	93	151.25	150.25	137.75	123.25	