

## Johnson, Sabrina O

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**From:** Wiesman, Ronald <WiesmanR@hillsboroughcounty.org>  
**Sent:** Thursday, June 13, 2019 4:01 PM  
**To:** Morgan, Steve; Barker, Maurice; Kautz, Lance; SWD\_Waste  
**Cc:** Byer, Kimberly; Schinella, Beth; O'Neill, Joseph; Ruiz, Larry  
**Subject:** Hillsborough County May Composting Report  
**Attachments:** May2019 Rpt.pdf

Mr. Morgan,

The May composting report for Hillsborough County is attached.  
Please advise should you have any questions concerning the information provided.

Thank you,

### Ron Wiesman II

#### Manager

Solid Waste Management Division  
Infrastructure Services

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**P:** (813) 671-7707 VOIP 42801

**M:** (813) 455-2194

**E:** [wiesmanr@HCFLGov.net](mailto:wiesmanr@HCFLGov.net)

**W:** <http://HCFLGOV.net>

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#### Hillsborough County

15960 County Road 672 Lithia, FL 33547

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**Hillsborough  
County Florida**

**SOLID WASTE MANAGEMENT**

PO Box 1110 Tampa, FL 33601-1110  
813-272-5680

June 13, 2019

Mr. Steve Morgan  
Solid Waste Section  
Florida Department of Environmental Protection, Southwest  
District  
13051 N. Telecom Pkwy  
Temple Terrace, Florida 33637

Subject: Southeast County Landfill – Composting Monthly Report

Dear Mr. Morgan:

Hillsborough County Solid Waste Management Division hereby submits the May composting report for Hillsborough County.

Should you have any questions or require additional information concerning this submittal, please contact me at (813) 671-7707.

Sincerely,

Ron Wiesman  
Manager  
Solid Waste Management Division

RWW/ya  
Attachments

**CC:** Beth Schinella, Division Director, Utility Operations, PUD  
Kim Byer, Division Director, Solid Waste Management Division  
Joseph O'Neill, Professional Engineer II, Solid Waste Management Division  
Larry Ruiz, Section Manager, Solid Waste Management Division

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Christine M. Beck

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Peggy Caskey

**INFRASTRUCTURE SERVICES  
ADMINISTRATOR**

John Lyons

### Summary of Monthly Events

Biosolids Received (wet tons):	1064.97 tons of biosolids received for the month.
Source of Biosolids:	Hillsborough County Falkenburg AWWTP
Source of Bulking Agent:	Consolidated Resource Recovery
General Description of Activities:	<ul style="list-style-type: none"> <li>• All incoming biosolids were mixed with bulking agent and formed into windrows on the same day as received.</li> <li>• 6 windrows were formed and in active composting as of 5/31/19.</li> <li>• Windrow temperatures were monitored daily.</li> <li>• 8 windrows has met temperature and time requirements of the Process to Further Reduce Pathogens (PFRP).</li> <li>• 8 windrow has been turned.</li> <li>• Sampling was performed on May 15, 2019.</li> <li>• 970.49 tons of finished compost was picked up by Life Soils.</li> </ul>
Attachments:	A-J: Windrow construction and temperature records.

## Attachment A

<b>MSAP Process Temperature Chart Windrow# 19-4-5</b>																						
<b>Temperature: Shading equals temperature 131 or greater for PFRP.</b>																						
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	4/6/19	145	143	140	135	150	147	143	136	150	147	143	139	149	146	141	138	148.5	145.75	141.75	137	
2	4/7/19																					
3	4/8/19	145	148	153	145	138	141	151	140	156	153	150	147	156	154	141	139	148.75	149	148.75	142.75	
4	4/9/19	136	140	142	145	133	136	134	145	134	136	142	152	131	133	137	141	133.5	136.25	138.75	145.75	
5	4/10/19	140	148	153	159	157	160	158	155	150	158	156	156	144	152	152	148	147.75	154.5	154.75	154.5	
6	4/11/19	141	151	159	160	162	164	161	157	155	166	158	158	148	162	158	154	151.5	160.75	159	157.25	
7	4/12/19	150	155	161	160	165	169	161	160	157	163	156	160	150	157	161	160	155.5	161	159.75	160	
8	4/13/19	145	154	160	161	140	146	152	163	140	148	154	160	147	155	162	161	143	150.75	157	161.25	
9	4/14/19																					
10	4/15/19	139	145	149	154	141	152	161	164	140	146	153	158	151	160	166	168	142.75	150.75	157.25	161	
11	4/16/19	151	156	164	168	153	156	159	162	151	158	165	165	164	168	170	170	154.75	159.5	164.5	166.25	
12	4/17/19	150	154	165	170	151	157	163	167	150	156	165	167	160	168	172	173	152.75	158.75	166.25	169.25	
13	4/18/19	136	139	145	154	146	152	156	162	148	154	160	162	150	157	161	166	145	150.5	155.5	161	
14	4/19/19	133	135	141	152	150	152	159	160	150	152	161	165	150	155	166	167	145.75	148.5	156.75	161	
15	4/20/19	136	139	140	148	152	155	160	161	152	160	163	165	148	152	161	165	147	151.5	156	159.75	
16	4/21/19																					
17	4/22/19	136	144	148	152	149	155	159	161	148	141	148	156	136	144	148	152	142.25	146	150.75	155.25	Turn
18	4/23/19	138	144	149	154	145	150	152	156	150	158	152	154	138	144	150	155	142.75	149	150.75	154.75	
19	4/24/19	140	144	152	156	138	140	145	151	153	160	163	166	140	143	152	157	142.75	146.75	153	157.5	
20	4/25/19	145	150	156	159	142	146	149	154	156	163	169	166	144	147	154	160	146.75	151.5	157	159.75	
21	4/26/19	150	153	158	160	147	150	152	156	159	161	168	166	150	157	160	162	151.5	155.25	159.5	161	
22	4/27/19	155	153	153	150	151	155	157	159	162	163	163	165	155	166	171	173	155.75	159.25	161	161.75	
23	4/28/19																					
24	4/29/19	162	166	170	172	140	148	155	161	142	146	150	155	148	156	162	165	148	154	159.25	163.25	Turn
25	4/30/19	166	169	172	174	150	157	166	169	161	156	163	165	155	159	162	161	158	160.25	165.75	167.25	
26	5/1/19	140	146	151	157	155	161	164	165	150	158	162	164	151	156	160	162	149	155.25	159.25	162	
27	5/2/19	155	164	168	171	144	152	163	168	158	164	169	172	150	162	167	172	151.75	160.5	166.75	170.75	
28	5/3/19	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	
29	5/4/19	141	147	154	160	150	156	160	165	145	148	157	164	145	149	154	157	145.25	150	156.25	161.5	

## Attachment B

<b>MSAP Process Temperature Chart Windrow# 19-4-11</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	4/12/19	136	140	141	138	140	144	138	136	140	136	133	132	145	140	138	136	140.25	140	137.5	135.5	
2	4/13/19	148	152	152	148	158	156	154	150	155	159	162	162	156	145	142	138	154.25	153	152.5	149.5	
3	4/14/19																					
4	4/15/19	158	159	159	159	150	155	158	161	152	156	158	156	161	161	152	146	155.25	157.75	156.75	155.5	
5	4/16/19	152	156	156	154	154	162	160	158	156	162	154	151	158	161	159	152	155	160.25	157.25	153.75	
6	4/17/19	150	157	160	160	161	165	161	158	158	161	155	151	153	161	164	156	155.5	161	160	156.25	
7	4/18/19	150	155	160	160	156	158	162	160	150	158	158	154	152	159	163	158	152	157.5	160.75	158	
8	4/19/19	149	156	162	161	156	158	162	161	150	155	159	156	155	160	162	161	152.5	157.25	161.25	159.75	
9	4/20/19	146	152	161	161	152	159	160	161	149	154	159	155	155	160	162	160	150.5	156.25	160.5	159.25	
10	4/21/19																					
11	4/22/19	150	150	155	162	148	155	158	161	149	156	148	156	158	161	161	162	151.25	155.5	155.5	160.25	
12	4/23/19	151	154	156	157	157	162	164	164	165	171	166	159	154	163	168	168	156.75	162.5	163.5	162	
13	4/24/19	132	138	141	148	138	141	144	147	148	151	155	151	141	147	153	157	139.75	144.25	148.25	150.75	
14	4/25/19	137	143	148	155	141	142	146	152	154	150	157	162	150	158	165	169	145.5	148.25	154	159.5	
15	4/26/19	141	148	155	160	143	148	151	155	153	158	161	165	159	163	168	170	149	154.25	158.75	162.5	
16	4/27/19	152	157	163	167	153	157	163	165	161	166	167	170	161	166	169	172	156.75	161.5	165.5	168.5	
17	4/28/19																					
18	4/29/19	138	145	150	156	142	148	154	158	139	142	148	156	157	162	166	168	144	149.25	154.5	159.5	Turn
19	4/30/19	140	147	152	159	155	159	161	163	144	149	152	161	160	167	170	172	149.75	155.5	158.75	163.75	
20	5/1/19	156	164	167	170	148	151	158	160	160	162	166	170	147	158	163	167	152.75	158.75	163.5	166.75	
21	5/2/19	161	168	170	172	158	160	165	167	139	143	145	147	161	165	168	171	154.75	159	162	164.25	
22	5/3/19	150	157	165	172	158	163	166	165	159	165	169	172	160	164	167	170	156.75	162.25	166.75	169.75	
23	5/4/19	156	160	165	171	153	157	159	159	155	159	163	163	153	157	167	173	154.25	158.25	163.5	166.5	
24	5/5/19																					
25	5/6/19	154	157	158	160	151	155	157	158	148	150	153	160	135	140	147	151	147	150.5	153.75	157.25	
26	5/7/19	148	154	162	165	145	151	156	162	158	161	162	162	158	161	166	170	152.25	156.75	161.5	164.75	
27	5/8/19	148	164	171	173	142	151	161	168	146	159	165	170	160	168	172	173	149	160.5	167.25	171	
28	5/9/19	164	170	171	170	148	159	168	173	166	171	173	173	164	170	172	173	160.5	167.5	171	172.25	Turn
29	5/10/19	141	152	165	171	145	153	159	165	147	158	164	172	146	155	162	169	144.75	154.5	162.5	169.25	
30	5/11/19	140	146	152	160	142	148	153	159	145	149	154	159	143	148	154	158	142.5	147.75	153.25	159	

### Attachment C

<b>MSAP Process Temperature Chart Windrow# 19-4-16</b>																						
<b>Temperature: Shading equals temperature 131 or greater for PFRP.</b>																						
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	4/17/19	138	142	147	144	144	148	150	150	136	143	140	135	134	132	128	126	138	141.25	141.25	138.75	
2	4/18/19	141	146	154	151	147	150	152	148	140	148	144	138	138	135	132	130	141.5	144.75	145.5	141.75	
3	4/19/19	138	146	155	156	147	152	150	152	148	155	156	145	146	148	140	135	144.75	150.25	150.25	147	
4	4/20/19	139	144	150	156	152	155	151	156	150	157	160	152	152	156	148	140	148.25	153	152.25	151	
5	4/21/19																					
6	4/22/19	138	141	153	162	149	152	157	159	152	157	159	160	156	158	156	152	148.75	152	156.25	158.25	
7	4/23/19	165	161	164	167	148	155	161	166	155	158	154	148	158	160	158	156	156.5	158.5	159.25	159.25	
8	4/24/19	132	138	141	148	138	141	144	147	148	151	155	151	141	147	153	165	139.75	144.25	148.25	152.75	
9	4/25/19	134	143	149	154	149	154	159	163	153	157	160	162	140	132	134	138	144	146.5	150.5	154.25	
10	4/26/19	138	148	154	155	153	158	161	165	155	158	161	164	138	136	138	140	146	150	153.5	156	
11	4/27/19	144	151	155	163	157	161	166	171	155	160	161	164	139	142	144	151	148.75	153.5	156.5	162.25	
12	4/28/19																					
13	4/29/19	140	148	156	164	144	154	158	162	161	166	179	172	156	163	166	170	150.25	157.75	164.75	167	
14	4/30/19	155	159	161	166	151	155	159	159	161	167	169	172	160	162	167	170	156.75	160.75	164	166.75	
15	5/1/19	162	168	171	171	159	162	165	166	140	145	146	145	142	156	161	166	150.75	157.75	160.75	162	
16	5/2/19	135	144	154	162	142	151	156	159	138	151	160	165	156	158	158	159	142.75	151	157	161.25	
17	5/3/19	140	144	149	158	144	149	154	160	145	154	161	166	145	149	156	163	143.5	149	155	161.75	Turn
18	5/4/19	147	153	160	164	153	158	161	164	154	159	161	166	150	156	159	164	151	156.5	160.25	164.5	
19	5/5/19																					
20	5/6/19	151	155	159	164	148	153	157	163	138	144	155	162	158	161	161	165	148.75	153.25	158	163.5	
21	5/7/19	143	146	151	159	142	148	156	161	145	147	148	152	152	158	164	166	145.5	149.75	154.75	159.5	
22	5/8/19	154	160	166	162	145	145	143	144	142	142	146	150	164	164	162	159	151.25	152.75	154.25	153.75	
23	5/9/19	156	161	164	167	154	158	160	163	152	158	163	166	163	171	175	178	156.25	162	165.5	168.5	
24	5/10/19	154	159	167	175	156	163	165	169	156	163	168	171	154	159	168	173	155	161	167	172	
25	5/11/19	139	145	149	157	146	149	152	157	141	146	149	154	142	146	159	163	142	146.5	152.25	157.75	Turn
26	5/12/19																					
27	5/13/19	143	151	158	167	145	150	154	159	145	150	155	159	148	153	159	167	145.25	151	156.5	163	
28	5/14/19	140	146	151	155	148	156	161	164	144	149	152	154	152	161	167	170	146	153	157.75	160.75	
29	5/15/19	163	168	166	162	169	172	174	171	164	168	168	162	164	168	171	167	165	169	169.75	165.5	
30	5/16/19	146	155	163	167	148	155	151	142	148	151	152	156	154	160	164	166	149	155.25	157.5	157.75	

## Attachment D

<b>MSAP Process Temperature Chart Windrow# 19-4-24</b>																						
<b>Temperature: Shading equals temperature 131 or greater for PFRP.</b>																						
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	4/25/19	156	163	163	168	151	155	157	156	132	134	135	139	134	138	140	142	143.25	147.5	148.75	151.25	
2	4/26/19	165	168	168	172	157	160	158	160	131	136	138	140	136	138	142	144	147.25	150.5	151.5	154	
3	4/27/19	165	166	171	173	163	166	169	171	144	150	155	144	154	150	148	146	156.5	158	160.75	158.5	
4	4/28/19																					
5	4/29/19	145	161	166	168	151	162	165	165	157	158	153	145	156	158	157	150	152.25	159.75	160.25	157	
6	4/30/19	150	152	159	161	155	159	161	162	160	166	171	170	151	155	160	163	154	158	162.75	164	
7	5/1/19	136	142	149	158	140	149	155	157	139	148	154	158	154	159	160	159	142.25	149.5	154.5	158	
8	5/2/19	138	143	154	162	155	162	166	166	152	160	166	168	149	154	160	163	148.5	154.75	161.5	164.75	
9	5/3/19	143	147	151	154	143	146	150	156	147	154	163	169	148	153	157	157	145.25	150	155.25	159	
10	5/4/19	159	163	167	171	156	160	166	170	153	156	160	163	155	160	164	168	155.75	159.75	164.25	168	
11	5/5/19																					
12	5/6/19	150	155	157	159	163	167	169	171	156	160	160	161	136	139	146	151	151.25	155.25	158	160.5	
13	5/7/19	164	171	173	176	150	158	162	163	163	166	166	164	162	164	166	165	159.75	164.75	166.75	167	
14	5/8/19	148	156	161	166	156	162	164	164	160	166	166	165	141	153	162	166	151.25	159.25	163.25	165.25	
15	5/9/19	142	157	163	166	146	158	163	165	164	169	169	166	161	164	162	161	153.25	162	164.25	164.5	
16	5/10/19	142	148	153	159	142	148	153	160	142	146	153	163	141	145	152	152	141.75	146.75	152.75	158.5	Turn
17	5/11/19	150	156	160	166	144	151	156	159	146	150	157	160	149	154	157	162	147.25	152.75	157.5	161.75	
18	5/12/19																					
19	5/13/19	155	159	162	169	151	156	159	162	150	154	159	163	155	158	161	165	152.75	156.75	160.25	164.75	
20	5/14/19	140	151	160	165	156	157	157	156	141	143	148	150	142	150	157	164	144.75	150.25	155.5	158.75	
21	5/15/19	164	166	169	167	170	172	172	169	162	165	165	161	163	166	166	165	164.75	167.25	168	165.5	
22	5/16/19	158	167	171	172	151	160	168	174	162	171	174	173	163	170	173	170	158.5	167	171.5	172.25	Turn
23	5/17/19	169	170	170	168	168	170	172	170	155	157	171	170	157	166	169	170	162.25	165.75	170.5	169.5	
24	5/18/19	161	166	169	170	158	162	166	171	159	161	166	169	160	166	168	170	159.5	163.75	167.25	170	
25	5/19/19																					
26	5/20/19	154	161	165	171	165	168	171	172	148	152	158	161	160	163	166	168	156.75	161	165	168	
27	5/21/19	153	160	166	172	165	171	173	174	145	151	160	166	157	166	167	169	155	162	166.5	170.25	
28	5/22/19	158	164	166	168	150	162	168	168	154	160	163	166	166	170	172	170	157	164	167.25	168	Turn
29	5/23/19	141	144	145	148	143	146	150	153	145	151	153	158	154	158	160	160	145.75	149.75	152	154.75	

## Attachment E

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 19-5-4		
Windrow Construction:			Date Commenced: 4-25-19		Date Completed: 5-4-19	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
4/25/19	Mike Bayne	21.46	27.90	44	22	
4/25/19	Jerry Devoe	21.78	28.31	44	22	60
4/26/19	Jerry Devoe	21.84	28.39	44	22	40
5/2/19	Jerry Devoe	21.69	28.20	44	22	
5/2/19	Jerry Devoe	22.17	28.82	44	22	60
5/3/19	Oscar Ochoa	21.52	27.98	44	22	
5/3/19	Oscar Ochoa	21.02	27.33	44	22	60
5/4/19	Jerry Devoe	21.69	28.20	44	22	50
Totals		173.17	225.12	352.00	176.00	270.00
Windrow Construction ratio:			3.54 /1			
Note: Yard waste yards = number of buckets * 4.00						

MSAP Process Temperature Chart Windrow# 19-5-4																						
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	5/5/19																					
2	5/6/19	155	159	159	160	161	165	165	165	159	165	166	168	141	146	146	148	154	158.75	159	160.25	
3	5/7/19	151	157	163	164	151	156	153	148	154	158	160	159	159	162	160	152	153.75	158.25	159	155.75	
4	5/8/19	158	161	165	165	158	161	164	166	158	163	166	167	159	160	164	166	158.25	161.25	164.75	166	
5	5/9/19	162	163	162	158	144	152	160	164	158	159	161	161	152	153	153	151	154	156.75	159	158.5	
6	5/10/19	140	146	151	155	147	156	165	167	153	158	163	168	150	156	160	164	147.5	154	159.75	163.5	
7	5/11/19	137	142	146	150	134	138	143	149	144	149	154	158	145	149	156	160	140	144.5	149.75	154.25	
8	5/12/19																					
9	5/13/19	141	146	149	153	139	142	146	151	149	156	160	162	150	152	158	162	144.75	149	153.25	157	
10	5/14/19	149	155	159	161	158	164	165	165	151	156	156	155	156	157	154	150	153.5	158	158.5	157.75	
11	5/15/19	145	150	155	158	158	161	165	169	144	152	158	162	152	159	160	162	149.75	155.5	159.5	162.75	
12	5/16/19	160	163	163	162	146	154	158	161	162	166	167	158	158	161	165	163	156.5	161	163.25	161	
13	5/17/19	155	159	161	162	148	152	157	160	166	168	166	155	159	160	166	162	157	159.75	162.5	159.75	
14	5/18/19	159	162	165	162	155	155	161	166	166	169	163	150	155	161	169	166	158.75	161.75	164.5	161	
15	5/19/19																					
16	5/20/19	152	155	159	162	156	160	164	165	161	165	169	171	162	166	165	161	157.75	161.5	164.25	164.75	
17	5/21/19	151	153	158	163	158	160	163	166	160	166	170	172	166	166	166	167	158.75	161.25	164.25	167	
18	5/22/19	169	171	168	162	158	159	158	152	159	160	160	158	161	161	157	159	161.75	162.75	160.75	157.75	
19	5/23/19	152	160	162	158	150	156	155	150	154	156	158	158	158	156	160	160	153.5	157	158.75	156.5	
20	5/24/19	139	142	146	153	144	148	156	163	147	153	158	161	156	159	163	163	146.5	150.5	155.75	160	
21	5/25/19	141	145	149	154	148	155	161	164	149	156	160	162	156	161	163	166	148.5	154.25	158.25	161.5	
22	5/26/19																					
23	5/27/19																					
24	5/28/19	158	162	166	170	152	158	165	166	162	166	168	168	151	158	163	168	155.75	161	165.5	168	
25	5/29/19	162	166	170	172	158	165	168	168	166	169	169	170	149	157	164	167	158.75	164.25	167.75	169.25	
26	5/30/19	156	159	164	168	150	158	162	165	162	166	168	168	155	162	165	167	155.75	161.25	164.75	167	
27	5/31/19	148	151	153	155	150	152	160	166	150	151	157	161	143	146	150	157	147.75	150	155	159.75	



## Attachment F

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 19-5-9		
Windrow Construction:			Date Commenced: 5-4-19		Date Completed: 5-9-19	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
5/4/19	Jerry Devoe	22.08	28.70	44	22	50
5/6/19	Mike Bayne	21.64	28.13	44	22	
5/6/19	Mike Bayne	20.71	26.92	44	22	60
5/7/19	Jerry Devoe	21.75	28.28	44	22	
5/7/19	Jerry Devoe	22.23	28.90	44	22	60
5/8/19	Oscar Ochoa	21.77	28.30	44	22	
5/8/19	Oscar Ochoa	21.48	27.92	44	22	60
5/9/19	Mike Bayne	22.10	28.73	44	22	50
<b>Totals</b>		173.76	225.89	352.00	176.00	280.00
<b>Windrow Construction ratio:</b>			3.58 /1			
Note: Yard waste yards = number of buckets * 4.00						

<b>MSAP Process Temperature Chart Windrow# 19-5-9</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	5/10/19	161	164	162	150	160	162	166	160	158	162	162	156	164	166	165	150	160.75	163.5	163.75	154	
2	5/11/19	160	163	163	152	158	161	165	161	154	161	160	157	164	166	164	152	159	162.75	163	155.5	
3	5/12/19																					
4	5/13/19	141	149	154	161	148	152	157	160	150	153	158	162	147	152	157	161	146.5	151.5	156.5	161	
5	5/14/19	162	164	165	163	159	163	163	160	158	161	161	160	150	156	160	161	157.25	161	162.25	161	
6	5/15/19	157	168	168	166	158	165	168	168	162	168	169	170	157	162	165	169	158.5	165.75	167.5	168.25	
7	5/16/19	155	160	163	163	155	162	164	161	158	163	164	162	150	158	164	166	154.5	160.75	163.75	163	
8	5/17/19	157	163	166	167	159	165	168	168	162	166	165	164	154	161	167	169	158	163.75	166.5	167	
9	5/18/19	155	163	167	170	160	164	169	171	158	164	167	169	151	155	166	170	156	161.5	167.25	170	
10	5/19/19																					
11	5/20/19	147	160	166	166	160	165	168	166	165	167	163	161	158	161	162	157	157.5	163.25	164.75	162.5	
12	5/21/19	146	163	165	165	163	167	168	168	164	164	164	163	158	160	160	151	157.75	163.5	164.25	161.75	
13	5/22/19	164	168	168	166	150	158	163	165	166	171	172	171	158	164	164	163	159.5	165.25	166.75	166.25	
14	5/23/19	140	143	143	141	141	146	152	158	145	147	151	152	147	152	155	157	143.25	147	150.25	152	
15	5/24/19	137	139	141	143	143	148	155	162	145	149	153	153	150	156	158	162	143.75	148	151.75	155	
16	5/25/19	140	143	145	147	146	149	154	160	147	152	155	156	150	156	160	164	145.75	150	153.5	156.75	Turn
17	5/26/19																					
18	5/27/19																					
19	5/28/19	158	162	164	165	156	161	163	163	155	161	164	164	155	160	163	164	156	161	163.5	164	
20	5/29/19	144	158	164	168	158	162	166	166	154	158	162	163	158	163	165	165	153.5	160.25	164.25	165.5	
21	5/30/19	148	153	157	161	151	159	163	163	151	155	160	163	152	162	165	166	150.5	157.25	161.25	163.25	
22	5/31/19	155	157	160	162	155	158	160	161	158	160	160	161	150	152	155	157	154.5	156.75	158.75	160.25	

## Attachment G

Hillsborough County Composting - Monitoring Sheet (MSAP Method)				Windrow # 19-5-14		
Windrow Construction:			Date Commenced: 5-10-19		Date Completed: 5-14-19	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
5/10/19	Jerry Devoe	21.94	28.52	44	22	
5/10/19	Jerry Devoe	22.10	28.73	44	22	60
5/11/19	Jerry Devoe	22.43	29.16	44	22	
5/11/19	Jerry Devoe	20.71	26.92	44	22	60
5/13/19	Mike Bayne	19.49	25.34	44	22	
5/13/19	Mike Bayne	21.13	27.47	44	22	60
5/14/19	Oscar Ochoa	21.70	28.21	44	22	
5/14/19	Mike Bayne	22.60	29.38	44	22	60
<b>Totals</b>		172.10	223.73	352.00	176.00	240.00
<b>Windrow Construction ratio:</b>		3.43 /1				

<b>MSAP Process Temperature Chart Windrow# 19-5-14</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	5/10/19	164	161	148	140	162	162	154	149	162	162	154	150	160	160	146	140	162	161.25	150.5	144.75	
2	5/11/19	164	163	150	144	166	164	156	150	166	164	160	156	162	162	148	142	164.5	163.25	153.5	148	
3	5/12/19																					
4	5/13/19	161	164	156	152	162	168	158	155	164	170	162	160	160	164	154	152	161.75	166.5	157.5	154.75	
5	5/14/19	160	163	156	151	162	166	163	160	162	166	163	161	160	159	148	144	161	163.5	157.5	154	
6	5/15/19	160	162	160	155	162	166	166	162	161	165	163	165	160	162	161	156	160.75	163.75	162.5	159.5	
7	5/16/19	161	164	162	158	158	164	168	162	159	162	163	165	159	161	162	159	159.25	162.75	163.75	161	
8	5/17/19	154	158	160	160	156	160	165	162	160	154	162	164	154	158	161	159	156	157.5	162	161.25	
9	5/18/19	156	158	159	159	158	161	165	162	161	159	162	164	160	159	162	159	158.75	159.25	162	161	
10	5/19/19																					
11	5/20/19	160	165	167	167	164	166	165	160	150	154	159	160	158	157	150	146	158	160.5	160.25	158.25	
12	5/21/19	161	166	168	168	166	166	160	159	148	156	161	164	158	158	152	146	158.25	161.5	160.25	159.25	
13	5/22/19	164	166	156	154	162	168	170	168	166	166	163	158	148	157	162	165	160	164.25	162.75	161.25	
14	5/23/19	142	145	149	152	145	147	151	153	140	145	147	148	144	146	149	153	142.75	145.75	149	151.5	
15	5/24/19	141	146	150	155	145	149	153	157	141	145	149	152	145	148	152	159	143	147	151	155.75	
16	5/25/19	144	148	152	156	145	151	155	158	142	147	151	153	145	149	154	158	144	148.75	153	156.25	
17	5/26/19																					
18	5/27/19																					
19	5/28/19	156	161	166	168	165	169	169	166	166	168	171	170	165	168	168	164	163	166.5	168.5	167	
20	5/29/19	162	166	169	171	168	168	170	166	160	164	169	171	165	168	170	170	163.75	166.5	169.5	169.5	
21	5/30/19	155	158	161	165	166	169	168	166	165	169	171	171	161	168	171	172	161.75	166	167.75	168.5	
22	5/31/19	158	161	161	163	162	165	166	168	160	165	165	164	158	161	159	157	159.5	163	162.75	163	

## Attachment H

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 19-5-20	
Windrow Construction:			Date Commenced: 5-15-19		Date Completed: 5-20-19	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
5/15/19	Mike Bayne	22.71	29.52	44	22	
5/15/19	Mike Bayne	23.91	31.08	44	22	60
5/16/19	Jerry Devoe	21.70	28.21	44	22	
5/16/19	Jerry Devoe	22.69	29.50	44	22	60
5/17/19	Oscar Ochoa	21.32	27.72	44	22	
5/17/19	Oscar Ochoa	21.52	27.98	44	22	60
5/18/19	Jerry Devoe	22.48	29.22	44	22	
5/18/19	Jerry Devoe	23.16	30.11	44	22	60
5/20/19	Mike Bayne	23.29	30.28	44	22	50
<b>Totals</b>		202.78	263.61	396.00	198.00	290.00
<b>Windrow Construction ratio:</b>		3.35 /1				

<b>MSAP Process Temperature Chart Windrow# 19-5-20</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	5/21/19	166	166	163	150	166	168	166	152	164	161	152	142	148	145	134	132	161	160	153.75	144	
2	5/22/19	158	156	152	145	162	163	158	150	160	160	154	152	156	155	150	144	159	158.5	153.5	147.75	
3	5/23/19	143	147	152	157	145	150	155	159	145	147	151	156	150	154	160	160	145.75	149.5	154.5	158	
4	5/24/19	144	149	155	163	149	153	157	161	145	150	157	163	153	157	162	164	147.75	152.25	157.75	162.75	
5	5/25/19	146	151	158	163	150	156	158	161	144	150	157	161	152	158	163	163	148	153.75	159	162	
6	5/26/19																					
7	5/27/19																					
8	5/28/19	150	156	162	164	156	163	166	166	158	165	166	167	166	169	166	160	157.5	163.25	165	164.25	
9	5/29/19	152	160	166	166	160	164	165	161	142	151	158	162	157	164	164	159	152.75	159.75	163.25	162	
10	5/30/19	156	162	163	158	158	165	168	164	156	162	165	166	155	161	166	166	156.25	162.5	165.5	163.5	
11	5/31/19	138	143	148	152	149	150	154	157	157	160	162	165	155	157	163	167	149.75	152.5	156.75	160.25	

## Attachment I

<b>Hillsborough County Composting - Monitoring Sheet (MSAP Method)</b>				<b>Windrow # 19-5-24</b>		
<b>Windrow Construction:</b>			Date Commenced: 5-20-19	Date Completed: 5-24-19		
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
5/20/19	Mike Bayne	22.04	28.65	44	22	50
5/21/19	Mike Bayne	22.30	28.99	44	22	
5/21/19	Mike Bayne	23.78	30.91	44	22	60
5/22/19	Jerry Devoe	24.10	31.33	44	22	
5/22/19	Jerry Devoe	22.70	29.51	44	22	60
5/23/19	Jerry Devoe	22.13	28.77	44	22	
5/23/19	Jerry Devoe	22.52	29.28	44	22	60
5/24/19	Oscar Ochoa	22.65	29.45	44	22	
5/24/19	Oscar Ochoa	21.97	28.56	44	22	60
<b>Totals</b>		204.19	265.45	396.00	198.00	290.00
<b>Windrow Construction ratio:</b>		3.33 /1				

<b>MSAP Process Temperature Chart Windrow# 19-5-24</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	5/25/19	158	154	150	149	160	156	148	148	152	154	148	144	148	146	140	133	154.5	152.5	146.5	143.5	
2	5/26/19																					
3	5/27/19																					
4	5/28/19	163	163	161	157	161	161	155	148	162	164	165	165	160	164	165	164	161.5	163	161.5	158.5	
5	5/29/19	162	165	165	161	160	163	161	158	162	167	165	158	163	164	163	159	161.75	164.75	163.5	159	
6	5/30/19	152	161	165	166	166	168	166	162	166	166	164	162	165	165	162	159	162.25	165	164.25	162.25	
7	5/31/19	158	160	163	167	152	155	157	162	158	161	163	167	157	160	162	165	156.25	159	161.25	165.25	

## Attachment J

Hillsborough County Composting - Monitoring Sheet (MSAP Method)					Windrow # 19-5-30	
Windrow Construction:			Date Commenced: 5-25-19		Date Completed: 5-30-19	
Date	Operator Name	Biosolids (tons)	Biosolids (yards)	Yard Waste (yards)	Overs (yards)	Cover (yards)
5/25/19	Jerry Devoe	21.79	28.33	44	22	
5/25/19	Jerry Devoe	22.70	29.51	44	22	60
5/28/19	Mike Bayne	22.52	29.28	44	22	
5/28/19	Mike Bayne	22.23	28.90	44	22	60
5/29/19	Mike Bayne	22.37	29.08	44	22	
5/29/19	Mike Bayne	22.24	28.91	44	22	60
5/30/19	Oscar Ochoa	23.95	31.14	44	22	
5/30/19	Oscar Ochoa	22.66	29.46	44	22	60
<b>Totals</b>		180.46	234.60	352.00	176.00	240.00
<b>Windrow Construction ratio:</b>		3.27 /1				

<b>MSAP Process Temperature Chart Windrow# 19-5-30</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	5/31/19	140	144	152	155	133	138	143	140	151	152	160	163	150	153	160	164	143.5	146.75	153.75	155.5	