

Contamination Measurement
For
Loads of Recyclable Materials, Organics
Materials & Plant Materials
April 1 – 5, 2013

Presented to:

RethinkWaste

Submitted by:

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April 19, 2013

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*Sloan*VAZQUEZ_{LLC}

Municipal Solid Waste Management & Recycling Advisors

April 19, 2013

Cliff Feldman
Recycling Programs Coordinator
South Bayside Waste Management Authority
610 Elm Street, Suite 202
San Carlos, 94070

Re: Contamination Measurement – Performed April 1 – 6, 2013

Dear Mr. Feldman:

Sloan Vazquez, LLC is pleased to have assisted the SBWMA with the performance of the Contamination Measurement Study. The results of the contamination measurement are included in our report which is attached hereto.

Our team assembled at Shoreway on Monday, April 1, 2013 and completed the field reconnaissance and preparation for the sampling process. We met with managers and line supervisors from Recology and South Bay Recycling to confirm the operating procedures and measurement protocols, and the roles and responsibilities of each party during the contamination measurement period. The samples were collected, sorted, analyzed, and recorded commencing on Monday, April 1, 2013 and completed on Friday, April 5, 2013.

Thank you for the opportunity to work with SBWMA on this important project.

Cordially,

Joe Sloan
President

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CONTAMINATION MEASUREMENT – APRIL 1 – 5, 2012

PURPOSE

Section 6.02B of the *Franchise Agreement for Collection Services with Recology San Mateo County* (hereinafter “Agreement”) establishes the method of determining disincentive payments from Recology to SBWMA when contamination levels exceed the maximum amounts set forth therein. The SBWMA engaged the services of Sloan Vazquez, LLC to conduct the Contamination Measurement Study in accordance with the requirements of the Agreement. This report contains the contamination measurements from each of the five (5) designated streams during the sampling period.

METHODOLOGY

The contamination sampling was based upon the methodology described in *Attachment E-2* of the Agreement. For the purposes of sampling as documented in this report, *Attachment E-2*, the *Sample Selection Protocol*, the *Materials Sorting List*, and the *Policies and Procedures*, taken altogether, are described as the Contamination Measurement Protocol (Exhibit H).

The fourteen material types sampled are listed in Exhibits C, D, E, F, & G.

Also, the identifiable biodegradable plastics in the organic/plant samples are separately identified.

SAMPLING POPULATIONS

The following material streams were sampled during the April 1 – 5, 2013 sampling period:

- 1) Commercial Recyclables (also “CR”)
- 2) Residential Recyclables (also “RR”)
- 3) Commercial Organics (also “CO”)
- 4) Residential Organics (also “RO”)
- 5) Commercial Plant (also “CP”)

Twelve (12) samples were collected and sorted from each of the respective streams. The Commercial Plant material samples were collected, as available, from commercial greenwaste roll-off containers in accordance with the Contamination Measurement Protocol. All of the other samples and sample cells were randomly selected using the methodology provided in the Contamination Measurement Protocol. Sixty (60) total samples were collected and sorted during the sampling period. The daily sampling of routes is set forth in Table 1. Exhibit A contains the Collection Route Selection Sheet of randomized daily routes.

Table 1 – Contamination Measurement (April 1 – 5, 2013)

Routes Sampled by Day and by Material Type

Material	Mon 4/1/13	Tue 4/2/13	Wed 4/3/13	Thu 4/4/13	Fri 4/5/13	Total Samples by Material
Commercial Recyclables	931 633 634 631	932 935 933	623 634 638 931	935		12
Residential Recyclables	845 857 847	836 845 841 832	844 851 833 849	848		12
Commercial Organics	951 952 953	951 953 952	952 951 953	953 952 951		12
Residential Organics	874 861	866 889 867	865 874 861	876 870 861 887		12
Commercial Plant Roll-Off Loads-not routed	CP-1	CP-2 CP-7 CP-8	CP-4 CP-9 CP-10	CP-3 CP-5 CP-6 CP-11 CP-12		12
Total Samples Per Day	13	16	17	14		60

SAMPLE CELL EXTRACTIONS

For each of the sixty (60) samples, a skid-steer type of loader equipped with a grapple bucket was used to extract material from the randomly selected cells. The skid-steer loader is an agile, fast, and precise piece of equipment that is ideal for performing the sample extraction in accordance with the *Sample Selection Protocol*. Sloan Vazquez provided the skid-steer and the operator for the study.

MEASUREMENTS AND CALCULATIONS

The sample weights were manually recorded on Field Form Tally Sheets and later entered into the final Contamination Measurement Tally Sheets that are contained in Exhibits C, D, E, F, & G.

For each material type, the average sample weight either fell within or exceeded the desired average weight range indicated in the Contamination Measurement Protocol. See Table 2.

Table 2 – Contamination Measurement - 4/19/13- Sample Weight Averages

Material	Total Samples	Average Weights (lbs)	Recommended Weight Range (lbs)
Commercial Recyclables	12	208.5	125-175
Residential Recyclables	12	197.8	175-225
Commercial Organics	12	226.1	125-175
Residential Organics	12	196.9	175-225
Commercial Plant	12	195.0	125-175

OBSERVATION AND MONITORING

Representatives from Recology observed the procedures associated with the sample collection and sorting process including:

- 1) Spotting and tipping of randomly selected loads,
- 2) Extraction of material from randomly selected cells,
- 3) Weighing the extracted sample,
- 4) Sorting of material from selected cells into “contaminant” and “acceptable” categories,
- 5) Weighing the contaminant fraction,
- 6) Recording the data into Field Form Tally Sheets

Recology and the SBWMA had full access to observe all aspects of the sampling and sorting process during the entire course of the sampling period. Recology representatives were consulted regarding “questionable” items recovered from the respective samples. When needed, [Appendix A: Materials](#)

Sorting List of ATTACHMENT E-2 was consulted and, in each instance, concurrence was reached between Recology and Sloan Vazquez personnel regarding the disposition of the material.

CONTAMINATION SAMPLING RESULTS

Exhibits C, D, E, F, & G contain the final record of contamination contained in each sample. The data from those Exhibits is summarized in Table 3. Maximum contamination amounts as set forth in the Agreement are provided for comparison.

Table 3 – Contamination Measurement- 4/19/13

Measured and Maximum Allowable Contamination

Measured Material Stream	Measured Contamination for 4/1/13 – 4/5/ 13	Maximum Allowable Contamination Level	Variance for 4/1/13 – 4/5/13
Commercial Recyclables	8.4%	10.0%	(1.6%)
Residential Recyclables	8.6%	8.5%	0.1%
Commercial Organics	3.3%	10.0%	(6.7%)
Residential Organics	0.4%	5.0%	(4.6%)
Commercial Plant	2.1%	5.0%	(2.9%)

ADDITIONAL RECORDS

The following referenced item is not attached to this report, but can be obtained from the SBWMA:

- 1) The SBWMA Member Agencies Franchise Agreements with Recology San Mateo County.

Table 4 – Summary of Sample Weights for each Category

	COMMERCIAL RECYCLING			RESIDENTIAL RECYCLING			COMMERCIAL ORGANICS			RESIDENTIAL ORGANICS			COMMERCIAL PLANT		
	SUMMARY		% Captured Sample	SUMMARY		% Captured Sample	SUMMARY		% Sample Weight	SUMMARY		% Sample Weight	SUMMARY		% Sample Weight
Total Sample Weight	Total	Average		Total	Average		Total	Average		Total	Average		Total	Average	
Total Sample Weight	2502.2	208.5		2373.4	197.8		2713.0	226.1		2165.8	196.9		2339.8	195.0	
Captured Sample Weight				2352.5	196.0										
Shrinkage				20.9	1.7										
Materials	Acceptable	Non Acceptable	% Captured Sample	Acceptable	Non Acceptable	% Captured Sample	Other Acceptable	Non-Acceptable	% Sample Weight	Other Acceptable	Non-Acceptable	% Sample Weight	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	1,202.8		48.1%	471.3		20.0%	-		0.0%	-		0.0%	-		0.0%
Mixed Fiber	718.1		28.7%	931.1		39.6%	-		0.0%	-		0.0%	-		0.0%
Plastic (all except PET & Film)	94.8		3.8%	136.5		5.8%		14.7	0.5%		1.4	0.1%		-	0.0%
Film Plastic		61.4	2.5%		45.0	1.9%		16.6	0.6%		3.6	0.2%		-	0.0%
Biodegradable Plastics	-		0.0%	-		0.0%	1.0		0.0%	-		0.0%	-		0.0%
PET UBC's	28.6		1.1%	72.4		3.1%		0.4	0.0%		0.4	0.0%		-	0.0%
Glass UBC's	187.7		7.5%	417.5		17.7%		1.2	0.0%		-	0.0%		-	0.0%
Aluminum UBC'S	8.2		0.3%	28.2		1.2%		0.6	0.0%		0.4	0.0%		-	0.0%
Mixed Ferrous (Tin & Other)	28.2		1.1%	57.9		2.5%		4.2	0.2%		-	0.0%		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%		1.6	0.1%		-	0.0%		-	0.0%		35.1	1.5%
Haz Waste (paint, insecticide, pesticide)		-	0.0%		1.0	0.0%		2.0	0.1%		-	0.0%		-	0.0%
E-Waste (including small appliances)		5.8	0.2%		1.8	0.1%		-	0.0%		-	0.0%		-	0.0%
"Fines" (<2" items)	11.8		0.5%	34.7		1.5%		-	0.0%		-	0.0%		-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		143.4	5.7%		153.5	6.5%		49.4	1.8%		1.9	0.1%		13.4	0.6%
Totals	2,280.2	210.6		2,149.6	202.9		1.0	89.1		-	7.7		-	48.5	
Percentage of Captured Sample	91.1%	8.4%		91.4%	8.6%			3.3%			0.4%			2.1%	
Maximum Allowable Contamination Level		10.0%			8.5%			10.0%			5.0%			5.0%	
Variance		-1.6%			0.1%			-6.7%			-4.6%			-2.9%	
							Count			Count			Count		
							Biodegradable Plastic Bags	3.0		2.0			-		

EXHIBITS

EXHIBIT A – RANDOMIZED DAILY ROUTE SELECTION

EXHIBIT B – SCALEHOUSE NOTIFICATION FORM – LISTING OF SELECTED ROUTES BY DAY

EXHIBIT C – COMMERCIAL RECYCLING CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT D – RESIDENTIAL RECYCLING CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT E – COMMERCIAL ORGANICS CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT F – RESIDENTIAL ORGANICS CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT G – COMMERCIAL PLANT CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT H – CONTAMINATION MEASUREMENT PROTOCOL, E-2, SAMPLE PROTOCOL, POLICIES AND PROCEDURES, & SAMPLING SORTING LIST

EXHIBIT A

RANDOMIZED DAILY ROUTE SELECTION

**Collection Route and Sample Cell Randomizer
(Collection Route Selection Sheet)**

March 28, 2013 7:50 AM

This Microsoft Excel workbook generates randomized rankings of collection routes within material categories (commercial recyclables, residential recyclables, commercial organics, commercial plant, and residential organics) for each day of the week (Monday through Friday) from which routes may be selected for sampling. The randomization function also generates a primary sample cell (1-16) and an alternate sample cell for each route.

To randomize routes and sample cells:

Press the function key "F9" once to initiate the randomization function and generate a date-stamped set of ranked routes. (Note that pressing F9 again, altering the workbook, closing and reopening the workbook, etc. will initiate the randomization function again.)

To preserve the set of randomized routes and cells*:

From the **Save As** dialog box under "Save as type," select "PDF." Under "Options," select "Entire Workbook" and click "OK." Then generate the PDF by clicking "Publish."

OR

From the **Print** dialog box under "Print what," select "Entire Workbook" and click "OK." This will print all individual worksheets associated with each day of the week. Note that this will not create an electronic version of the document.

*These instructions are for users of MS Excel 2007. The Save As and Print functions in other versions of Excel may differ.

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: March 28, 2013 7:50 AM

MONDAY					
Commercial Recyclables					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
1	0.06723959	931	2	13	FEL
9	0.438123388	932	9	4	FEL
6	0.268400108	933	10	5	FEL
7	0.291627499	934	14	4	FEL
12	0.624074459	935	9	10	FEL
13	0.632005013	936	14	15	FEL
5	0.243865704	937	5	13	FEL
15	0.878398001	938	3	12	FEL
8	0.422238823	623	16	14	REL
4	0.112458623	631	1	9	REL
14	0.713335186	632	9	11	REL
2	0.070291561	633	12	15	REL
3	0.080404704	634	14	16	REL
11	0.583099323	637	13	3	REL
10	0.516161801	639	10	3	REL

Residential Recyclables					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
19	0.823528197	635	13	5	THS
12	0.512356895	831	12	7	
16	0.668345023	832	11	7	
4	0.173303464	833	11	8	
18	0.736063522	834	13	15	
26	0.993403006	835	16	12	
17	0.700913873	836	13	16	
22	0.842024033	837	3	12	
5	0.215870327	838	10	8	
13	0.560451448	839	6	4	
23	0.935764761	840	1	15	
6	0.224515126	841	4	3	
8	0.340082249	842	15	13	
10	0.444874736	843	10	14	
7	0.248685877	844	11	7	
1	0.014354486	845	14	8	
25	0.984400145	846	1	12	
3	0.097449757	847	8	7	
20	0.833074109	848	4	16	
11	0.480758531	849	8	10	
24	0.939934677	850	11	10	
14	0.623489724	851	14	15	
2	0.089232121	857	11	14	
15	0.632564805	858	12	5	
21	0.841557692	859	15	10	
9	0.41197225	860	2	10	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
1	0.267102558	951	2	3	FEL
2	0.466129012	952	12	6	FEL
3	0.908982198	953	11	6	FEL

Commercial Plant					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
7	0.848167448		14	16	
2	0.143340859		3	13	
4	0.303518087		9	3	
1	0.062480732		15	6	
8	0.923718477		9	2	
6	0.624253835		14	1	
3	0.220777655		13	5	
5	0.485094663		14	8	

Residential Organics					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
3	0.00834729	861	9	5	
5	0.065266131	862	1	9	
17	0.77147385	863	16	13	
20	0.856164906	864	11	8	
21	0.85781378	865	13	9	
11	0.274055858	866	14	6	
10	0.210831091	867	5	12	
15	0.6858237	868	13	3	
13	0.385392126	869	5	14	
23	0.883797819	870	14	12	
9	0.200086235	871	5	2	
22	0.872771016	872	7	4	
8	0.125580515	873	8	14	
2	0.006067748	874	7	5	
7	0.101454073	875	11	13	
14	0.480880861	876	13	12	
12	0.32048113	877	11	15	
16	0.706313633	878	13	4	
18	0.79796313	887	10	16	HTS
1	0.004656472	888	1	10	HTS
6	0.066955193	889	4	8	VHTS
4	0.035872287	890	12	10	
19	0.827677413	891	10	9	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

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TUESDAY					
Commercial Recyclables					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
5	0.195140741	931	12	1	FEL
1	0.065876229	932	11	15	FEL
3	0.085791081	933	7	15	FEL
4	0.092065192	934	6	7	FEL
2	0.08160581	935	4	13	FEL
12	0.755710728	936	7	3	FEL
6	0.253996187	937	1	16	FEL
15	0.89093777	938	16	12	FEL
11	0.742318504	623	13	2	REL
10	0.636170204	631	7	12	REL
8	0.532656558	632	5	16	REL
14	0.868086837	633	9	7	REL
9	0.544974925	634	12	2	REL
13	0.818484718	637	7	2	REL
7	0.466156409	639	9	16	REL

Residential Recyclables					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
22	0.917038686	635	12	7	THS
12	0.426869863	831	15	13	
4	0.126109172	832	15	2	
18	0.764830495	833	7	14	
10	0.352681562	834	9	4	
5	0.133165918	835	15	7	
1	0.097333973	836	7	13	
6	0.1568355	837	6	5	
16	0.703310243	838	10	4	
26	0.999155164	839	5	9	
21	0.896284075	840	6	2	
3	0.119325589	841	14	15	
14	0.526859864	842	11	3	
11	0.390017012	843	6	15	
15	0.673856357	844	7	15	
2	0.097422712	845	9	7	
7	0.23790401	846	4	15	
9	0.295090517	847	10	16	
24	0.978341378	848	4	13	
8	0.290091199	849	1	10	
20	0.857980939	850	12	3	
19	0.830911337	851	7	13	
23	0.926382646	857	13	5	
13	0.481105378	858	3	4	
17	0.764353396	859	1	2	
25	0.98030042	860	4	13	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
1	0.096175173	951	9	16	FEL
2	0.271302384	952	8	5	FEL
3	0.686492417	953	2	13	FEL

Commercial Plant					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
1	0.19156024		6	16	
2	0.309525527		5	10	
7	0.857784808		9	8	
4	0.42534164		6	5	
6	0.828145232		1	7	
3	0.329041246		1	3	
5	0.784956888		15	9	
8	0.996331915		9	8	

Residential Organics					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
15	0.788952258	861	4	7	
4	0.205841927	862	4	15	
14	0.755723548	863	10	6	
22	0.942764392	864	5	4	
19	0.872093119	865	7	11	
1	0.022955074	866	3	11	
3	0.138615356	867	6	11	
16	0.841627473	868	12	9	
21	0.939234885	869	14	13	
5	0.251131713	870	5	2	
9	0.425421388	871	12	1	
17	0.861438348	872	1	15	
10	0.530907676	873	1	11	
7	0.390202313	874	9	11	
18	0.871823515	875	16	4	
13	0.700808292	876	8	4	
12	0.615305561	877	12	9	
23	0.997718613	878	15	1	
20	0.931443217	887	13	16	HTS
8	0.410829041	888	2	13	HTS
2	0.086591723	889	12	15	VHTS
11	0.552928977	890	5	1	
6	0.318830945	891	5	6	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

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Wednesday					
Commercial Recyclables					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
4	0.26566116	931	8	12	FEL
9	0.467455924	932	11	16	FEL
8	0.463061534	933	2	6	FEL
13	0.823695566	934	15	14	FEL
12	0.79507128	935	15	8	FEL
7	0.458671565	936	4	10	FEL
6	0.366786799	937	3	1	FEL
5	0.34382089	938	5	8	FEL
1	0.026692573	623	14	16	REL
15	0.970887856	631	3	16	REL
11	0.748510914	632	2	9	REL
16	0.98281478	633	1	3	REL
2	0.222061319	634	11	9	REL
10	0.69016229	637	15	9	REL
3	0.225611846	638	14	2	REL
14	0.896494156	639	11	10	REL

Residential Recyclables					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
6	0.323812684	635	12	8	THS
25	0.980017582	831	6	13	
10	0.471591715	832	1	15	
3	0.13139256	833	13	8	
20	0.790777867	834	15	2	
23	0.86488176	835	5	12	
15	0.690850384	836	6	14	
24	0.914230717	837	16	5	
11	0.504069201	838	5	13	
22	0.843723648	839	1	15	
19	0.786178983	840	10	3	
26	0.984554539	841	12	10	
21	0.831817554	842	16	11	
8	0.371589027	843	10	11	
1	0.069608409	844	3	12	
16	0.706528474	845	1	9	
14	0.608328072	846	4	2	
7	0.367230148	847	5	15	
9	0.446346348	848	3	9	
4	0.192924087	849	5	2	
13	0.560671378	850	5	10	
2	0.098569365	851	11	2	
18	0.776925256	857	15	1	
5	0.265842642	858	13	11	
12	0.51968848	859	2	12	
17	0.725018414	860	12	2	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
2	0.216556247	951	10	8	FEL
1	0.121643252	952	4	6	FEL
3	0.667166943	953	6	7	FEL

Commercial Plant					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
1	0.03250432		13	2	
6	0.442417573		2	15	
3	0.16934565		5	8	
7	0.466605096		8	5	
8	0.678753659		14	2	
4	0.19718055		7	5	
2	0.077151968		16	12	
5	0.287804872		16	8	

Residential Organics					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
3	0.235869473	861	16	2	
21	0.931079238	862	7	13	
7	0.533280468	863	12	3	
9	0.554739403	864	4	16	
1	0.162511532	865	3	2	
11	0.644982892	866	5	2	
8	0.549488738	867	5	4	
20	0.887975043	868	3	11	
13	0.706023973	869	6	7	
4	0.342356856	870	4	12	
10	0.609211751	871	10	8	
19	0.874624109	872	5	10	
22	0.9482888	873	15	13	
2	0.198855789	874	2	6	
6	0.461460514	875	6	4	
16	0.782345343	876	13	3	
17	0.798040416	877	12	9	
18	0.824535199	878	12	3	
15	0.767366702	887	5	15	HTS
23	0.953748574	888	8	16	HTS
14	0.748370837	889	15	7	VHTS
12	0.69247849	890	13	11	
5	0.358444131	891	14	4	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: March 28, 2013 7:50 AM

Thursday					
Commercial Recyclables					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
13	0.491708709	931	10	16	FEL
12	0.474742011	932	9	15	FEL
1	0.007642897	933	7	11	FEL
10	0.411621144	934	7	8	FEL
2	0.075838573	935	11	2	FEL
8	0.356589696	936	10	8	FEL
9	0.380430655	937	9	2	FEL
5	0.209310445	938	7	11	FEL
6	0.269864521	623	8	2	REL
16	0.855257048	631	7	3	REL
14	0.707831329	632	9	7	REL
3	0.168900173	633	3	1	REL
4	0.175656221	634	13	3	REL
11	0.43203388	637	7	11	REL
15	0.807694078	638	9	5	REL
7	0.325449324	639	5	12	REL

Residential Recyclables					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
13	0.375289773	635	6	1	THS
20	0.783484613	831	11	4	
5	0.130623424	832	14	11	
9	0.295356211	833	16	10	
3	0.030895164	834	6	2	
23	0.926809719	835	11	14	
16	0.652258589	836	16	4	
24	0.949094481	837	10	13	
7	0.20875852	838	16	4	
14	0.486776909	839	16	12	
8	0.234203976	840	11	12	
17	0.654863248	841	14	5	
4	0.118220824	842	7	4	
19	0.734235247	843	15	13	
6	0.180214481	844	1	15	
21	0.876003818	845	3	2	
18	0.71209164	846	7	1	
10	0.331078891	847	13	16	
2	0.022021246	848	16	12	
26	0.99388031	849	13	8	
25	0.970599032	850	14	11	
15	0.489890841	851	9	15	
12	0.365590185	857	10	2	
1	0.001146954	858	1	5	
22	0.918320102	859	6	15	
11	0.346988145	860	10	15	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
3	0.77953747	951	4	8	FEL
2	0.390891553	952	1	2	FEL
1	0.148643943	953	8	13	FEL

Commercial Plant					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
6	0.468364858		16	5	
7	0.614605474		14	15	
2	0.218671125		5	13	
1	0.09670715		14	11	
5	0.420930017		1	6	
4	0.321342107		14	10	
3	0.316780125		3	2	
8	0.861159897		9	7	

Residential Organics					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
3	0.197080513	861	4	6	
5	0.233553167	862	11	5	
11	0.609278697	863	2	1	
14	0.638996475	864	3	14	
18	0.792775768	865	3	8	
16	0.654428521	866	2	9	
23	0.932929945	867	4	12	
8	0.455158574	868	8	1	
19	0.796152217	869	13	9	
2	0.186604338	870	7	5	
22	0.918105069	871	15	14	
12	0.616455249	872	1	3	
10	0.53479457	873	13	16	
9	0.509197443	874	11	9	
13	0.619049827	875	12	11	
1	0.050141418	876	12	6	
20	0.840413231	877	5	9	
7	0.454637757	878	6	4	
4	0.210340251	887	12	1	HTS
6	0.412160159	888	11	5	HTS
17	0.699138152	889	9	11	VHTS
15	0.641037694	890	2	15	
21	0.843295858	891	16	14	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: March 28, 2013 7:50 AM

Friday					
Commercial Recyclables					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
15	0.757898964	931	4	7	FEL
1	0.071216987	932	4	3	FEL
11	0.42238779	933	1	13	FEL
5	0.165648748	934	15	1	FEL
4	0.127801531	935	11	14	FEL
3	0.103401894	936	2	3	FEL
9	0.406643905	937	2	13	FEL
16	0.961244077	938	4	16	FEL
8	0.290908698	623	2	10	REL
14	0.699773221	631	9	5	REL
6	0.220018985	632	5	11	REL
7	0.242770438	633	5	6	REL
10	0.4157532	634	6	16	REL
13	0.693798288	637	4	10	REL
2	0.075417877	638	11	8	REL
12	0.479327111	639	8	16	REL

Residential Recyclables					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
7	0.130541252	635	13	9	THS
20	0.760729973	831	11	4	
25	0.904320871	832	11	15	
11	0.257577601	833	15	10	
10	0.244270523	834	14	2	
13	0.427545178	835	6	7	
9	0.2235746	836	6	3	
6	0.101026613	837	2	8	
2	0.024465775	838	9	15	
4	0.089716963	839	9	10	
8	0.193640228	840	10	5	
21	0.761141969	841	16	10	
26	0.936322851	842	5	14	
19	0.710596182	843	1	10	
24	0.859058783	844	2	7	
23	0.795639383	845	1	6	
15	0.502925339	846	11	5	
1	0.001138722	847	12	14	
3	0.072059241	848	15	13	
18	0.678007579	849	15	7	
17	0.676064073	850	16	14	
22	0.78563514	851	2	6	
12	0.345013994	857	1	11	
14	0.432212351	858	15	1	
16	0.522681067	859	6	8	
5	0.099666978	860	5	14	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
3	0.947420519	951	1	6	FEL
1	0.492848887	952	14	16	FEL
2	0.840869781	953	5	11	FEL

Commercial Plant					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
4	0.659841942		13	1	
5	0.745768303		14	6	
8	0.978323426		11	6	
7	0.898650393		14	12	
1	0.018577157		14	5	
3	0.430583619		5	7	
6	0.749729076		15	10	
2	0.357626133		8	5	

Residential Organics					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
4	0.279390832	861	13	8	
2	0.267750179	862	9	4	
19	0.766593413	863	12	1	
6	0.302919494	864	1	16	
11	0.570449607	865	12	6	
3	0.273319495	866	6	7	
13	0.610753399	867	3	2	
16	0.693111578	868	8	15	
7	0.477879763	869	2	11	
10	0.564045889	870	15	16	
9	0.504820012	871	10	16	
20	0.788695542	872	12	13	
8	0.492712679	873	15	11	
18	0.719560586	874	6	5	
5	0.292394595	875	5	6	
21	0.832463028	876	14	4	
12	0.580386859	877	9	15	
1	0.024557262	878	7	8	
14	0.612515883	887	3	12	HTS
17	0.715094463	888	10	6	HTS
22	0.94388815	889	1	8	VHTS
23	0.97523891	890	9	14	
15	0.646856877	891	16	11	

EXHIBIT B

SCALEHOUSE NOTIFICATION FORM

RethinkWaste CM 4/1/13 - 4/5/13 Route Selection

Vehicle Selection Sheet		Sampling Date: Monday, April 01, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
931			CR-1	2	13	FEL	1	
633			CR-2	12	15	REL	1	
634			CR-3	14	16	REL	1	
631			CR-3C	1	9	REL	1	
845			RR-1	14	8		1	
857			RR-2	11	14		1	
847			RR-2C	8	7		1	
951			CO-1	2	3	FEL	1	
952			CO-2	12	6	FEL	1	
953			CO-2C	11	6	FEL	1	
888			RO-1	1	10	HTS	1	
874			RO-2	7	5		1	
861			RO-3	9	5		1	
890			RO-3C	12	10		1	
CP-1			CP-1	15	6		1	
CP-2			CP-2	3	13		1	
CP-2C			CP-2C	13	5		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethinkWaste CM 4/1/13 - 4/5/13 Route Selection

Vehicle Selection Sheet		Sampling Date: Tuesday, April 02, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
932			CR-4	11	15	FEL	1	
935			CR-5	4	13	FEL	1	
933			CR-5C	7	15	REL	1	
836			RR-3	7	13		1	
845			RR-4	9	7		1	
841			RR-5	14	15		1	
832			RR-5C	15	2		1	
951			CO-3	9	16	FEL	1	
953			CO-4	8	5	FEL	1	
952			CO-4C	2	13	FEL	1	
866			RO-4	3	11		1	
889			RO-5	12	15	VHTS	1	
867			RO-5C	6	11		1	
CP-3			CP-3	6	16		1	
CP-4			CP-4	5	10		1	
CP-5			CP-5	1	3		1	
CP-5C			CP-5C	6	5		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethinkWaste CM 4/1/13 - 4/5/13 Route Selection

Vehicle Selection Sheet		Sampling Date: Wednesday, April 03, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
623			CR-6	14	16	REL	1	
634			CR-7	11	9	REL	1	
638			CR-8	14	2	REL	1	
931			CR-8C	8	12	FEL	1	
844			RR-6	3	12		1	
851			RR-7	11	2		1	
833			RR-8	13	8		1	
849			RR-8C	5	2		1	
952			CO-5	4	6	FEL	1	
951			CO-6	10	8	FEL	1	
953			CO-6C	6	7	FEL	1	
865			RO-6	3	2		1	
874			RO-7	2	6		1	
861			RO-7C	16	2		1	
CP-6			CP-6	13	2		1	
CP-7			CP-7	16	12		1	
CP-7C			CP-7C	5	8		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethnkWaste CM 4/1/13 - 4/5/13 Route Selection

Vehicle Selection Sheet		Sampling Date: Thursday, April 04, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
933			CR-9	7	11	FEL	1	
935			CR-10	11	2	FEL	1	
633			CR-10C	3	1	REL	1	
858			RR-9	1	5		1	
848			RR-10	16	12		1	
834			RR-10C	6	2		1	
953			CO-7	8	13	FEL	1	
952			CO-8	1	2	FEL	1	
951			CO-9	4	8	FEL	1	
876			RO-8	12	6		1	
870			RO-9	7	5		1	
861			RO-10	4	6		1	
887			RO-10C	12	1	HTS	1	
CP-8			CP-8	14	11		1	
CP-9			CP-9	5	13		1	
CP-9C			CP-9C	3	2		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethinkWaste CM 4/1/13 - 4/5/13 Route Selection

Vehicle Selection Sheet		Sampling Date: Friday, April 05, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
932			CR-11	4	3	FEL	1	
638			CR-12	11	8	REL	1	
936			CR-12C	2	3	FEL	1	
847			RR-11	12	14		1	
838			RR-12	9	15		1	
848			RR-12C	15	13		1	
952			CO-10	14	16	FEL	1	
953			CO-11	5	11	FEL	1	
951			CO-12	1	6	FEL	1	
878			RO-11	7	8		1	
862			RO-12	9	4		1	
866			RO-12C	6	7		1	
CP-10			CP-10	14	5		1	
CP-11			CP-11	8	5		1	
CP-12			CP-12	5	7		1	
CP-12C			CP-12C	13	1		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

EXHIBIT C

**COMMERCIAL RECYCLING CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/19/13		
	COMMERCIAL RECYLCING SUMMARY		
	Total	Average	
Captured Sample Weight	2,502.2	208.5	
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	1,202.8		48.1%
Mixed Fiber	718.1		28.7%
Plastic (all except PET & Film)	94.8		3.8%
Film Plastic		61.4	2.5%
PET UBC's	28.6		1.1%
Glass UBC's	187.7		7.5%
Aluminum UBC'S	8.2		0.3%
Mixed Ferrous (Tin & Other)	28.2		1.1%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		5.8	0.2%
"Fines" (<2" items)	11.8		0.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		143.4	5.7%
Totals	2,280.2	210.6	
Percentage of Captured Sample	91.1%	8.4%	
Maximum Allowable Contamination Level		10.0%	
Variance		-1.6%	

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	CR-1		
ROUTE:	931		
CITY:	Burlingame		
Total Sample Weight	277.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	222.8		80.4%
Mixed Fiber	16.0		5.8%
Plastic (all except PET & Film)	4.8		1.7%
Film Plastic		4.4	1.6%
PET UBC's	-		0.0%
Glass UBC's	2.0		0.7%
Aluminum UBC'S	1.8		0.6%
Mixed Ferrous (Tin & Other)	7.8		2.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		17.4	6.3%
Totals	255.2	21.8	
Percentage of Captured Sample	92.1%	7.9%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	CR-2		
ROUTE:	633		
CITY:	San Mateo - Burlingame		
Total Sample Weight	247.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	65.4		26.5%
Mixed Fiber	128.0		51.8%
Plastic (all except PET & Film)	13.6		5.5%
Film Plastic		0.4	0.2%
PET UBC's	3.2		1.3%
Glass UBC's	12.2		4.9%
Aluminum UBC'S	1.0		0.4%
Mixed Ferrous (Tin & Other)	1.0		0.4%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	2.4		1.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		19.8	8.0%
Totals	226.8	20.2	
Percentage of Captured Sample	91.8%	8.2%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	CR-3		
ROUTE:	634		
CITY:	San Mat-Bel-Burl-FC		
Total Sample Weight	157.4		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	29.0		18.4%
Mixed Fiber	97.0		61.6%
Plastic (all except PET & Film)	8.2		5.2%
Film Plastic		1.0	0.6%
PET UBC's	-		0.0%
Glass UBC's	15.2		9.7%
Aluminum UBC'S	0.4		0.3%
Mixed Ferrous (Tin & Other)	1.4		0.9%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		5.2	3.3%
Totals	151.2	6.2	
Percentage of Captured Sample	96.1%	3.9%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	CR-3C		
ROUTE:	631		
CITY:	Burlington-San Mateo		
Total Sample Weight	211.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	73.4		34.8%
Mixed Fiber	87.2		41.3%
Plastic (all except PET & Film)	4.0		1.9%
Film Plastic		2.2	1.0%
PET UBC's	2.6		1.2%
Glass UBC's	18.0		8.5%
Aluminum UBC'S	1.2		0.6%
Mixed Ferrous (Tin & Other)	3.8		1.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		18.6	8.8%
Totals	190.2	20.8	
Percentage of Captured Sample	90.1%	9.9%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	CR-4		
ROUTE:	932		
CITY:	Burlingame		
Total Sample Weight	238.6		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	155.2		65.0%
Mixed Fiber	47.0		19.7%
Plastic (all except PET & Film)	13.2		5.5%
Film Plastic		2.8	1.2%
PET UBC's	0.6		0.3%
Glass UBC's	8.4		3.5%
Aluminum UBC'S	0.4		0.2%
Mixed Ferrous (Tin & Other)	2.0		0.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		9.0	3.8%
Totals	226.8	11.8	
Percentage of Captured Sample	95.1%	4.9%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	CR-5		
ROUTE:	935		
CITY:	RWC-Menlo-EPA		
Total Sample Weight	141.6		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	102.2		72.2%
Mixed Fiber	19.4		13.7%
Plastic (all except PET & Film)	1.2		0.8%
Film Plastic		14.4	10.2%
PET UBC's	-		0.0%
Glass UBC's	0.2		0.1%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	0.2		0.1%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	2.8		2.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		1.2	0.8%
Totals	126.0	15.6	
Percentage of Captured Sample	89.0%	11.0%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	CR-5C		
ROUTE:	933		
CITY:	San Mateo-Foster City		
Total Sample Weight	228.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	128.0		56.1%
Mixed Fiber	68.2		29.9%
Plastic (all except PET & Film)	7.4		3.2%
Film Plastic		2.2	1.0%
PET UBC's		2.6	0.0%
Glass UBC's		4.6	0.0%
Aluminum UBC'S		0.6	0.0%
Mixed Ferrous (Tin & Other)		3.4	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	3.8		1.7%
Rejects/Refuse (food, liquids,, "garbage", etc.)		7.2	3.2%
Totals	207.4	20.6	
Percentage of Captured Sample	91.0%	9.0%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	4/3/1013		
PLACARD I.D. #	CR-6		
ROUTE:	623		
CITY:	RWC-San Carlos-Bel		
Total Sample Weight	226.6		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	73.6		32.5%
Mixed Fiber	68.2		30.1%
Plastic (all except PET & Film)	10.4		4.6%
Film Plastic		21.0	9.3%
PET UBC's	4.8		2.1%
Glass UBC's	16.2		7.1%
Aluminum UBC'S	0.8		0.4%
Mixed Ferrous (Tin & Other)	2.0		0.9%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		29.6	13.1%
Totals	176.0	50.6	
Percentage of Captured Sample	77.7%	22.3%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	CR-7		
ROUTE:	634		
CITY:	Bel-SM-Foster		
Total Sample Weight	182.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	54.2		29.7%
Mixed Fiber	74.2		40.7%
Plastic (all except PET & Film)	4.4		2.4%
Film Plastic		2.2	1.2%
PET UBC's	6.4		3.5%
Glass UBC's	35.4		19.4%
Aluminum UBC'S	1.0		0.5%
Mixed Ferrous (Tin & Other)	0.4		0.2%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		4.0	2.2%
Totals	176.0	6.2	
Percentage of Captured Sample	96.6%	3.4%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	CR-8		
ROUTE:	638		
CITY:	MP-Ath-SM-RWC		
Total Sample Weight	189.8		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	35.0		18.4%
Mixed Fiber	55.7		29.3%
Plastic (all except PET & Film)	9.2		4.8%
Film Plastic		1.4	0.7%
PET UBC's	9.0		4.7%
Glass UBC's	63.9		33.7%
Aluminum UBC'S	1.2		0.6%
Mixed Ferrous (Tin & Other)	2.8		1.5%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		11.6	6.1%
Totals	176.8	13.0	
Percentage of Captured Sample	93.2%	6.8%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	CR-8C		
ROUTE:	931		
CITY:	San Carlos		
Total Sample Weight	168.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	99.0		58.9%
Mixed Fiber	22.4		13.3%
Plastic (all except PET & Film)	15.6		9.3%
Film Plastic		8.8	5.2%
PET UBC's	0.6		0.4%
Glass UBC's	2.0		1.2%
Aluminum UBC'S	0.2		0.1%
Mixed Ferrous (Tin & Other)	0.4		0.2%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		5.8	3.4%
"Fines" (<2" items)	2.8		1.7%
Rejects/Refuse (food, liquids,, "garbage", etc.)		10.6	6.3%
Totals	143.0	25.2	
Percentage of Captured Sample	85.0%	15.0%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/04/13		
PLACARD I.D. #	CR-10		
ROUTE:	935		
CITY:	RWC-MP-EPA		
Total Sample Weight	234.6		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	165.0		70.3%
Mixed Fiber	34.8		14.8%
Plastic (all except PET & Film)	2.8		1.2%
Film Plastic		0.6	0.3%
PET UBC's	1.4		0.6%
Glass UBC's	14.2		6.1%
Aluminum UBC'S	0.2		0.1%
Mixed Ferrous (Tin & Other)	6.4		2.7%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		9.2	3.9%
Totals	224.8	9.8	
Percentage of Captured Sample	95.8%	4.2%	
Notes:			

EXHIBIT D

**RESIDENTIAL RECYCLING CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/19/13		
RESIDENTIAL RECYCLING SUMMARY			
	Total	Average	
Total Sample Weight	2,373.4	197.8	
Captured Sample Weight	2,352.5	196.0	
Shrinkage	20.9	1.7	
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	471.3		20.0%
Mixed Fiber	931.1		39.6%
Plastic (all except PET & Film)	136.5		5.8%
Film Plastic		45.0	0.0%
PET UBC's	72.4		3.1%
Glass UBC's	417.5		17.7%
Aluminum UBC'S	28.2		1.2%
Mixed Ferrous (Tin & Other)	57.9		2.5%
Inerts (brick, rock, tile, dirt, concrete)		1.6	0.0%
Haz Waste (paint, insecticide, pesticide)		1.0	0.0%
E-Waste (including small appliances)		1.8	0.0%
"Fines" (<2" items)	34.7		1.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		153.5	6.5%
Totals	2,149.6	202.9	
Percentage of Captured Sample	91.4%	8.6%	
Maximum Allowable Contamination Level		8.5%	
Variance		0.1%	

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	RR-1		
ROUTE:	845		
CITY:	Redwood City		
Total Sample Weight	188.60		
Captured Sample Weight	186.40		
Shrinkage	2.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	34.5		18.5%
Mixed Fiber	66.5		35.7%
Plastic (all except PET & Film)	10.2		5.5%
Film Plastic		0.6	0.3%
PET UBC's	11.4		6.1%
Glass UBC's	28.8		15.5%
Aluminum UBC'S	13.8		7.4%
Mixed Ferrous (Tin & Other)	2.7		1.4%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	4.4		2.4%
Rejects/Refuse (food, liquids,, "garbage", etc.)		13.5	7.2%
Totals	172.3	14.1	
Percentage of Captured Sample	92.4%	7.6%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	RR-2		
ROUTE:	857		
CITY:	Redwood City		
Total Sample Weight	276.00		
Captured Sample Weight	274.00		
Shrinkage	2.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	86.6		31.6%
Mixed Fiber	51.8		18.9%
Plastic (all except PET & Film)	23.6		8.6%
Film Plastic		10.0	0.0%
PET UBC's	6.2		2.3%
Glass UBC's	38.7		14.1%
Aluminum UBC'S	0.6		0.2%
Mixed Ferrous (Tin & Other)	11.2		4.1%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	6.7		2.4%
Rejects/Refuse (food, liquids,, "garbage", etc.)		38.6	14.1%
Totals	225.4	48.6	
Percentage of Captured Sample	82.3%	17.7%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/01/13		
PLACARD I.D. #	RR-2C		
ROUTE:	847		
CITY:	Redwood City		
Total Sample Weight	173.30		
Captured Sample Weight	171.80		
Shrinkage	1.5		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	42.2		24.6%
Mixed Fiber	57.4		33.4%
Plastic (all except PET & Film)	16.0		9.3%
Film Plastic		1.8	0.0%
PET UBC's	3.8		2.2%
Glass UBC's	26.0		15.1%
Aluminum UBC'S	0.4		0.2%
Mixed Ferrous (Tin & Other)	15.2		8.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	4.6		2.7%
Rejects/Refuse (food, liquids,, "garbage", etc.)		4.4	2.6%
Totals	165.6	6.2	
Percentage of Captured Sample	96.4%	3.6%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	RR-3		
ROUTE:	836		
CITY:	San Mateo		
Total Sample Weight	172.20		
Captured Sample Weight	171.40		
Shrinkage	0.8		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	25.0		14.6%
Mixed Fiber	88.0		51.3%
Plastic (all except PET & Film)	6.8		4.0%
Film Plastic		2.4	0.0%
PET UBC's	4.4		2.6%
Glass UBC's	31.2		18.2%
Aluminum UBC'S	1.0		0.6%
Mixed Ferrous (Tin & Other)	2.4		1.4%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		1.0	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		9.2	5.4%
Totals	158.8	12.6	
Percentage of Captured Sample	92.6%	7.4%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	RR-4		
ROUTE:	845		
CITY:	Redwood City		
Total Sample Weight	162.40		
Captured Sample Weight	161.20		
Shrinkage	1.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	22.8		14.1%
Mixed Fiber	94.4		58.6%
Plastic (all except PET & Film)	3.0		1.9%
Film Plastic		3.4	0.0%
PET UBC's	3.0		1.9%
Glass UBC's	25.8		16.0%
Aluminum UBC'S	0.6		0.4%
Mixed Ferrous (Tin & Other)	0.8		0.5%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		7.4	4.6%
Totals	150.4	10.8	
Percentage of Captured Sample	93.3%	6.7%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	RR-5		
ROUTE:	841		
CITY:	Menlo Park		
Total Sample Weight	192.70		
Captured Sample Weight	192.50		
Shrinkage	0.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	40.6		21.1%
Mixed Fiber	91.8		47.7%
Plastic (all except PET & Film)	19.5		10.1%
Film Plastic		2.0	0.0%
PET UBC's	8.2		4.3%
Glass UBC's	18.6		9.7%
Aluminum UBC'S	1.0		0.5%
Mixed Ferrous (Tin & Other)	1.2		0.6%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		9.6	5.0%
Totals	180.9	11.6	
Percentage of Captured Sample	94.0%	6.0%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	RR-5C		
ROUTE:	832		
CITY:	Burlingame		
Total Sample Weight	218.60		
Captured Sample Weight	216.40		
Shrinkage	2.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	31.2		14.4%
Mixed Fiber	78.0		36.0%
Plastic (all except PET & Film)	14.0		6.5%
Film Plastic		5.6	0.0%
PET UBC's	6.4		3.0%
Glass UBC's	64.8		29.9%
Aluminum UBC'S	3.6		1.7%
Mixed Ferrous (Tin & Other)	1.8		0.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	2.4		1.1%
Rejects/Refuse (food, liquids,, "garbage", etc.)		8.6	4.0%
Totals	202.2	14.2	
Percentage of Captured Sample	93.4%	6.6%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	RR-6		
ROUTE:	844		
CITY:	Redwood City		
Total Sample Weight	214.00		
Captured Sample Weight	210.80		
Shrinkage	3.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	65.4		31.0%
Mixed Fiber	67.0		31.8%
Plastic (all except PET & Film)	15.6		7.4%
Film Plastic		7.0	0.0%
PET UBC's	5.2		2.5%
Glass UBC's	26.8		12.7%
Aluminum UBC'S	1.0		0.5%
Mixed Ferrous (Tin & Other)	6.8		3.2%
Inerts (brick, rock, tile, dirt, concrete)		1.2	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	3.6		1.7%
Rejects/Refuse (food, liquids,, "garbage", etc.)		11.2	5.3%
Totals	191.4	19.4	
Percentage of Captured Sample	90.8%	9.2%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	RR-7		
ROUTE:	851		
CITY:	Redwood City		
Total Sample Weight	178.80		
Captured Sample Weight	176.00		
Shrinkage	2.8		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	55.2		31.4%
Mixed Fiber	60.2		34.2%
Plastic (all except PET & Film)	10.0		5.7%
Film Plastic		7.6	0.0%
PET UBC's	5.8		3.3%
Glass UBC's	15.2		8.6%
Aluminum UBC'S	1.2		0.7%
Mixed Ferrous (Tin & Other)	3.6		2.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		1.8	0.0%
"Fines" (<2" items)	4.4		2.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		11.0	6.3%
Totals	155.6	20.4	
Percentage of Captured Sample	88.4%	11.6%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	4/3//2013		
PLACARD I.D. #	RR-8		
ROUTE:	833		
CITY:	Hilsboro		
Total Sample Weight	198.20		
Captured Sample Weight	194.80		
Shrinkage	3.4		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	16.8		8.6%
Mixed Fiber	102.8		52.8%
Plastic (all except PET & Film)	3.0		1.5%
Film Plastic		2.0	0.0%
PET UBC's	4.0		2.1%
Glass UBC's	31.2		16.0%
Aluminum UBC'S	1.2		0.6%
Mixed Ferrous (Tin & Other)	4.6		2.4%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	6.8		3.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		22.4	11.5%
Totals	170.4	24.4	
Percentage of Captured Sample	87.5%	12.5%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	RR-8C		
ROUTE:	849		
CITY:	San Mateo		
Total Sample Weight	184.40		
Captured Sample Weight	184.20		
Shrinkage	0.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	29.4		16.0%
Mixed Fiber	83.4		45.3%
Plastic (all except PET & Film)	7.4		4.0%
Film Plastic		2.2	0.0%
PET UBC's	5.4		2.9%
Glass UBC's	40.2		21.8%
Aluminum UBC'S	2.6		1.4%
Mixed Ferrous (Tin & Other)	3.0		1.6%
Inerts (brick, rock, tile, dirt, concrete)		0.4	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	1.8		1.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		8.4	4.6%
Totals	173.2	11.0	
Percentage of Captured Sample	94.0%	6.0%	
Notes:			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/02/13		
PLACARD I.D. #	RR-10		
ROUTE:	848		
CITY:	San Mateo		
Total Sample Weight	214.20		
Captured Sample Weight	213.00		
Shrinkage	1.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	21.6		10.1%
Mixed Fiber	89.8		42.2%
Plastic (all except PET & Film)	7.4		3.5%
Film Plastic		0.4	0.0%
PET UBC's	8.6		4.0%
Glass UBC's	70.2		33.0%
Aluminum UBC'S	1.2		0.6%
Mixed Ferrous (Tin & Other)	4.6		2.2%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		9.2	4.3%
Totals	203.4	9.6	
Percentage of Captured Sample	95.5%	4.5%	
Notes:			

EXHIBIT E

**COMMERCIAL ORGANICS CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/19/13		
	COMMERCIAL ORGANICS SUMMARY		
	Total	Average	
Total Sample Weight	2713.0	226.1	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber 1 to 4	-	-	0.0%
Plastic (all except PET & Film)	-	14.7	0.5%
Film Plastic	-	16.6	0.6%
Biodegradable plastics	1.0	-	0.0%
PET UBC's	-	0.4	0.0%
Glass UBC's	-	1.2	0.0%
Aluminum UBC'S	-	0.6	0.0%
Mixed Ferrous (Tin & Other)	-	4.2	0.2%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	2.0	0.1%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	49.4	1.8%
Totals	1.0	89.1	
Percentage of Captured Sample		3.3%	
Maximum Allowable Contamination Level		10.0%	
Variance		-6.7%	
	Count		
Biodegradable Plastic Bags	3.0		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/01/13		
PLACARD I.D. #	CO-1		
ROUTE:	951		
CITY:	Burlingame, San Mateo, Foster City		
Total Sample Weight	260.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		3.2	1.2%
Film Plastic		1.4	0.5%
Biodegradable plastics	1.0		0.4%
PET UBC's		0.2	0.1%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)		2.6	1.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		29.6	11.4%
Totals	1.0	37.0	
Percentage of Sample Weight		14.2%	
Notes:	Rejects: 6.6 wax; 8.2 textile; 14.8 table cloth		
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/01/13		
PLACARD I.D. #	CO-2		
ROUTE:	952		
CITY:	RWC, NFO, MP, Atherton, EPA		
Total Sample Weight	300.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		2.2	0.7%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)		1.6	0.5%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		10.4	3.5%
Totals	-	14.2	
Percentage of Sample Weight		4.7%	
Notes:	Rejects: 2.2 wax; 2.2 textile; 6.0 wood 14 lbs contaminates		
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/01/13		
PLACARD I.D. #	CO-2C		
ROUTE:	953		
CITY:	RWC/SC/BEL/FC		
Total Sample Weight	335.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		0.08	0.0%
Film Plastic		4.0	1.2%
Biodegradable plastics			0.0%
PET UBC's		0.04	0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	4.1	
Percentage of Sample Weight		1.2%	
Notes:	Rejects: Fish and potatoes		
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	CO-3		
ROUTE:	951		
CITY:	SM/BURL/FC		
Total Sample Weight	265.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic		6.6	2.5%
Biodegradable plastics			0.0%
PET UBC's		0.2	0.1%
Glass UBC's			0.0%
Aluminum UBC'S		0.2	0.1%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	7.0	
Percentage of Sample Weight		2.6%	
Notes:			
	Count		
Biodegradable Plastic Bags	3.0		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	CO-4		
ROUTE:	953		
CITY:	SM/SC/BEL/RWC/FC		
Total Sample Weight	142.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		1.4	1.0%
Film Plastic		4.6	3.2%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)		2.0	1.4%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	8.0	
Percentage of Sample Weight		5.6%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	CO-4C		
ROUTE:	952		
CITY:	Menlo Park		
Total Sample Weight	198.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		6.8	3.4%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's		1.2	0.6%
Aluminum UBC'S		0.2	0.1%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	8.2	
Percentage of Sample Weight		4.1%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	CO-5		
ROUTE:	952		
CITY:	Menlo PARK		
Total Sample Weight	146.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Sample Weight		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	CO-6		
ROUTE:	951		
CITY:	SM/BURL/FC		
Total Sample Weight	154.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		0.6	0.4%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	0.6	
Percentage of Sample Weight		0.4%	
Notes:	Rejects: McDonalds and Taco Bell plastic cups		
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	CO-6C		
ROUTE:	953		
CITY:	SM/SC/BEL/RWC/FC		
Total Sample Weight	150.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		0.2	0.1%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	0.2	
Percentage of Sample Weight		0.1%	
Notes:	Rejects: Plastic containers for vegetables and fruit		
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CO-7		
ROUTE:	953		
CITY:	SM/SC/BEL/RWC/FC		
Total Sample Weight	254.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		0.6	0.2%
Totals	-	0.6	
Percentage of Sample Weight		0.2%	
Notes:	Rejects: wet rag and can of steel polish		
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CO-8		
ROUTE:	952		
CITY:	Menlo Park/ RWC		
Total Sample Weight	176.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		8.8	5.0%
Totals	-	8.8	
Percentage of Sample Weight		5.0%	
Notes:			
	Count		
Biodegradable Plastic Bags			

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/04/13		
PLACARD I.D. #	CO-9		
ROUTE:	951		
CITY:	FC/SM/BURL		
Total Sample Weight	327.80		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		0.2	0.1%
Film Plastic			0.0%
Biodegradable plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S		0.2	0.1%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	0.4	
Percentage of Sample Weight		0.1%	
Notes:			
	Count		
Biodegradable Plastic Bags			

EXHIBIT F

**RESIDENTIAL ORGANICS RECYCLING
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/19/13		
	RESIDENTIAL ORGANICS SUMMARY		
	Total	Average	
Total Sample Weight	2165.8	196.9	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		1.4	0.1%
Film Plastic		3.6	0.2%
Biodegradable Plastics	-		0.0%
PET UBC's		0.4	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		0.4	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		1.9	0.1%
Totals	-	7.7	
Percentage of Captured Sample		0.4%	
Maximum Allowable Contamination Level		5.0%	
Variance		-4.6%	
	Count		
Biodegradable Plastic Bags	2.0		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/01/13		
PLACARD I.D. #	RO-2		
ROUTE:	864		
CITY:	San Mateo Co, Belmont		
Total Sample Weight	198.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		1.0	0.5%
Totals	-	1.0	
Percentage of Captured Sample		0.5%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/01/13		
PLACARD I.D. #	RO-3		
ROUTE:	861		
CITY:	Burlingame		
Total Sample Weight	212.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		1.2	0.6%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	1.2	
Percentage of Captured Sample		0.6%	
Notes:			
	Count		
Biodegradable Plastic Bags	2.0		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	RO-4		
ROUTE:	866		
CITY:	San Mateo		
Total Sample Weight	211.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic		3.6	1.7%
Biodegradable Plastics			0.0%
PET UBC's		0.2	0.1%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	3.8	
Percentage of Captured Sample		1.8%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	RO-5		
ROUTE:	889		
CITY:	Hillsboro		
Total Sample Weight	128.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		0.8	0.6%
Totals	-	0.8	
Percentage of Captured Sample		0.6%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	RO-5C		
ROUTE:	867		
CITY:	Belmont		
Total Sample Weight	199.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	RO-6		
ROUTE:	865		
CITY:	Bel/SM		
Total Sample Weight	178.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)		0.2	0.1%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	0.2	
Percentage of Captured Sample		0.1%	
Notes:	Rejects Include: Straws; oreo cookie bag; plastic cover for toy box		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	RO-7		
ROUTE:	874		
CITY:	RWC		
Total Sample Weight	208.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's		0.2	0.1%
Glass UBC's			0.0%
Aluminum UBC'S		0.4	0.2%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	0.6	
Percentage of Captured Sample		0.3%	
Notes:	Rejects Include: 1-2 liter pet bottle Partial aluminum broom handle		
	Count		
Biodegradable Plastic Bags	-		

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/03/13		
PLACARD I.D. #	RO-7C		
ROUTE:	861		
CITY:	Redwood City		
Total Sample Weight			
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		0.1	0.0%
Totals	-	0.1	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	RO-8		
ROUTE:	876		
CITY:	Menlo Park		
Total Sample Weight	201.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:	Rejects Include: Carpet rug		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	RO-9		
ROUTE:	870		
CITY:	Menlo Park		
Total Sample Weight	211.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	RO-10		
ROUTE:	861		
CITY:	Burlingame, San Mateo		
Total Sample Weight	210.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	RO-10C		
ROUTE:	887		
CITY:	RWC		
Total Sample Weight	205.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

EXHIBIT G

**COMMERCIAL PLANT CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

**RethinkWaste
Contamination Measurement
4/1 - 4/5/2013**

DATE:	04/19/13		
	COMMERCIAL PLANT SUMMARY		
	Total	Average	
Total Sample Weight	2339.8	195.0	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	-	0.0%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	-	0.0%
Inerts (brick, rock, tile, dirt, concrete)	-	35.1	1.5%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	13.4	0.6%
Totals	-	48.5	
Percentage of Captured Sample		2.1%	
Maximum Allowable Contamination Level		5.0%	
Variance		-2.9%	

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/01/13		
PLACARD I.D. #	CP-1		
ROUTE:	CP-1		
CITY:	Burlingame		
Total Sample Weight	201.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	CP-2		
ROUTE:	CP-2		
CITY:	Hillsboro		
Total Sample Weight	189.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)		29.9	15.8%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	29.9	
Percentage of Captured Sample		15.8%	
Notes:	Rock & concrete		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	CP-3		
ROUTE:	CP-3		
CITY:	Burlingame		
Total Sample Weight	207.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		2.2	1.1%
Totals	-	2.2	
Percentage of Captured Sample		1.1%	
Notes:	4 PETE bottles; 1 milk carton; 1 metal brrom handle		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/02/13		
PLACARD I.D. #	CP-4		
ROUTE:	CP-4		
CITY:	Menlo Park		
Total Sample Weight	187.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		3.8	2.0%
Totals	-	3.8	
Percentage of Captured Sample		2.0%	
Notes:	Bicycle wheel/tire		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	CP-5		
ROUTE:	CP-5		
CITY:	San Carlos		
Total Sample Weight	202.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	CP-6		
ROUTE:	CP-6		
CITY:	Burlingame		
Total Sample Weight	194.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/03/13		
PLACARD I.D. #	CP-7		
ROUTE:	CP-7		
CITY:	Foster City		
Total Sample Weight	213.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)		5.2	2.4%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	5.2	
Percentage of Captured Sample		2.4%	
Notes:	1 cinder block broken		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CP-8		
ROUTE:	CP-8		
CITY:	San Mateo		
Total Sample Weight	176.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CP-9		
ROUTE:	CP-9		
CITY:	RWC		
Total Sample Weight	180.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CP-10		
ROUTE:	CP-10		
CITY:	Atherton		
Total Sample Weight	196.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CP-11		
ROUTE:	CP-11		
CITY:	San Carlos		
Total Sample Weight	201.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)			0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Contamination Measurement
4/1 - 4/5/2013

DATE:	04/04/13		
PLACARD I.D. #	CP-12		
ROUTE:	CP-12		
CITY:	Burlingame		
Total Sample Weight	188.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC			0.0%
Mixed Fiber			0.0%
Plastic (all except PET & Film)			0.0%
Film Plastic			0.0%
Biodegradable Plastics			0.0%
PET UBC's			0.0%
Glass UBC's			0.0%
Aluminum UBC'S			0.0%
Mixed Ferrous (Tin & Other)			0.0%
Inerts (brick, rock, tile, dirt, concrete)			0.0%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)			0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		7.4	3.9%
Totals	-	7.4	
Percentage of Captured Sample		3.9%	
Notes:	1 piece of sod with dirt 1 dirt "clods"		
Biodegradable Plastic Bags	-		

EXHIBIT H

CONTAMINATION MEASUREMENT PROTOCOL

ATTACHMENT E-2

Contamination Measurement Methodology: Quarterly Protocol

This Attachment presents the methodology for quantifying the Contamination Level in five (5) distinct materials streams Collected by Contractor from the SBWMA Service Area.

This Attachment is organized into the following six (6) sections:

1. **Objectives**—describes the purpose of the methodology.
2. **Sampling rationale**—presents key sample groupings for the methodology, based on the Agency and material stream.
3. **Sampling allocation and calendar**—describes the number of samples required to provide a sufficient level of accuracy in findings and outlines a schedule that provides representative and sufficient data to meet quarterly and annual sampling goals.
4. **Field procedures**—describes sampling activities for each sorting day.
5. **Sorting categories**—describes the sorting categories.
6. **Calculations**

Appendices 1 through 3 consist of:

1. *methodology checklist*
2. *sample data collection forms*
3. *equipment list*

1. Objectives

This methodology is designed to estimate the Contamination Level (as a percentage by weight of the entire load) in an individual load from any of the five (5) materials streams Collected in the SBWMA Service Area as follows:

- Commercial Source-Separated and Targeted Recyclable Materials
- Commercial Organic Materials
- Commercial Plant Materials
- Single-Family Targeted Recyclable Materials
- Single-Family Organic Materials

The methodology described herein is also intended to produce consistent and statistically reliable estimates of the Contamination Level for each material stream as a whole. In addition, the methodology is designed to require the minimum necessary organizational time and financial investment.

2. Sampling rationale

Load samples shall be collected from each material stream identified above. The sampling plan considers the SBWMA Service Area as a single source of materials generation. Each materials stream will be considered as separate sampling population.

3. Sampling allocation and calendar

A total of twelve (12) samples shall be collected from each materials stream per quarter to achieve the agreed upon desired level of statistical accuracy. Additional samples may be collected in accordance with the last paragraph of this Section 3 and in such cases, all samples taken shall be used to calculate the Measured Contamination Level(s) for that quarter.

The specified number of samples are based on the following factors:

- 1) An analysis of the composition variability among samples that were sorted during waste characterization studies of similar waste streams and programs in other west coast communities.
- 2) An agreement on the acceptable level of accuracy

Table 1 indicates the statistical confidence intervals (error ranges) at the ninety percent (90%) confidence level that are expected to result from characterizing twelve (12) samples per quarter and forty-eight (48) samples per year with respect to each material stream.

Table 1: Samples per Load and Results

Material stream	Estimated sample weight	Quarterly samples and results		Annual samples and results	
		Number of truckloads to be sampled ¹	Approximate statistical error range	Number of truckloads to be sampled ¹	Approximate statistical error range
Commercial Source-Separated and Targeted Recyclable Materials	150 lbs	12	3%	48	1.5%
Commercial Organic Materials	200 lbs	12	8%	48	4% to 5%
Commercial Plant Materials	150 lbs	12	1%	48	0.5%
Single-Family Targeted Recyclable Materials	150 lbs	12	2%	48	1%
Single-Family Organic Materials	150 lbs	12	1%	48	0.5%

¹ The error ranges in Table 1 are based on one (1) sample per truckload.

The error ranges shown above shall be interpreted as follows. When the calculation method described below provides the Measured Contamination Level in a material stream, the estimate will be expressed in terms of percent by weight of the entire material stream. The error range around the estimate reflects a percent by weight of the entire material stream. Thus, if the Measured Contamination Level in a given material stream is five percent (5%), plus or minus one percent (1%), then ninety percent (90%) confidence that the Contamination Level is between four percent (4%) and six percent (6%) of the total material stream is achieved.

The Parties agree that the actual Measured Contamination Level will be the sole determinant of the percentage of Contamination in a load, and of Contractor's compliance with the maximum contamination levels.

It is expected that a two (2) person crew can collect, sort, and weigh approximately twelve (12) samples in an eight (8) to ten (10) hour period, assuming a constant supply of samples is available. Therefore, two (2) sorters working approximately five (5) days per quarter will collect and sort the desired number of samples to assess all five (5) material streams, assuming there are enough inbound loads during that time period to provide the desired number of samples.

To capture seasonal variations, sampling events will be conducted during each of the the four (4) calendar quarters. In addition, sampling events will not be scheduled five (5) days immediately before or after Holidays.

If the Measured Contamination Level for a material stream calculated for one (1) calendar quarter varies by twenty five percent (25%) or more from the Measured Contamination Level calculated for the immediately preceding calendar quarter, Contractor may require the SBWMA to increase the number of samples to be taken in the following quarter (up to twenty four (24) samples) at Contractor's expense. The result of the increased sampling will be used together with the regularly scheduled sampling to establish the Measured Contamination Level for the material stream for that quarter.

4. Field Procedures

The field procedures are described in the following nine (9) steps, and shall be followed by the applicable party: Contractor, Operator, SBWMA, or a third party designated by the SBWMA.

- Advanced preparation for regularly scheduled testing
- Arrival at Facility for regularly scheduled testing
- Scale house coordination
- Tipping floor coordination
- Load selection
- Sample collection
- Sample sorting
- Sample disposal
- Data management

Contractor or its representative shall have the right to be present at, observe, and photograph and video all aspects of the sampling process, including without limitation each of the steps listed above or described below.

SBWMA shall be solely responsible for all costs incurred in implementing the sampling process and procedures described in this Attachment E-2, other than (i) costs incurred by Contractor in exercising its observation rights set forth in the preceding paragraph, and (ii) the full cost of conducting additional sampling implemented at Contractor's direction under Section 3.

The above field procedures or steps are described in more detail following the explanation of roles. Each step is the responsibility of a specific person or group of people as follows:

- **sampling crew manager**—responsible for identifying selected samples, working with Operator and the *sampling crew*, quality control, and compliance with Facility regulations.
- **sampling crew**—responsible for sorting samples.
- **MRF manager**—responsible for coordinating with the *sampling crew manager*.
- **scale house staff**—responsible for identifying selected vehicles, distributing sample placards, and directing drivers towards the sampling area.
- **tipping floor staff**—responsible for creating a designated sampling and sorting area, and ensuring segregation of selected loads in that area.
- **loader operator(s)**—responsible for segregating the selected load from other loads in the designated sampling and sorting area.
- **project manager**—responsible for managing the sampling process.
- **facility manager**—responsible for managing day-to-day operations at the Designated Transfer and Processing Facility
- **Contractor**—responsible for informing the scale house staff of load origin and material stream and for passing sample placards to the sampling crew manager.

Advanced preparation for regularly scheduled testing

Before each sampling day, the *sampling crew manager* will contact the *MRF manager* and require the *MRF manager* to remind the *scale house staff*, *tipping floor staff*, *loader operator(s)*, *Contractor*, and all other affected staff of the sampling plan. The *project manager* will also require the *facility manager* to provide the site's safety standards and disclose if any additional safety training will be required on site. In addition, the *project manager* will obtain and inspect all safety equipment and all sorting equipment (see list of supplies in Appendix 3), and develop and print all daily sampling quotas, vehicle selection sheets, placards, and tally sheets prior to beginning each sampling event. See Appendix 2 for sample forms.

Contractors, SBWMA staff and/or third parties will meet all requirements of and receive formal training in the safety requirements of the Facility.

Arrival at Facility for regularly scheduled testing

The *sampling crew* and *sampling crew manager* will arrive at the Designated Transfer and Processing Facility prior to the agreed upon start time to participate in any required safety training and to put on all required personal protective equipment. Before the start time, the *sampling crew manager* will also cover logistics with the *MRF manager*, as well as any needs and expectations for the study period (regardless of the amount of advance communication conducted.)

Scale house coordination

The *sampling crew manager* will speak with the *scale house staff* to explain the basic objectives of the study and provide the *scale house staff* with a copy of the vehicle selection sheet, as well as sampling placards to identify selected loads (see Appendix 2 for examples of field forms.) The *sampling crew manager* will ensure the *scale house staff* understands the needs of the study throughout the day, allowing the *scale house staff* to plan for transitions such as scheduled breaks and shift changes. Additionally, the *sampling crew manager* will provide the *scale house staff* with a means of contacting the *sampling crew manager* throughout the day.

The *scale house staff* is responsible for identifying selected vehicles using the vehicle selection sheet, provided by the *sampling crew manager*. The *scale house staff* will also distribute sampling placards to the *Contractor*.

Tipping floor coordination

With the input of the *MRF manager* and the *loader operator(s)*, the *sampling crew manager* will determine locations for two (2) designated sampling/sorting areas on or near the tipping floors. There will be one designated sampling/sorting area on the Organic Materials tipping floor and one area on the recyclables tipping floor. These sampling/sorting areas will be in a location in which the *sampling crew* can identify designated loads entering the tipping area, the *loader operator(s)* can visually communicate with the *sampling crew*, and the *loader operator(s)* can safely remove samples after sorting.

Once the *sampling crew manager* has determined the locations, the *sampling crew* will set up the designated sampling/sorting areas. The *sampling crew manager* will then walk through the process of extracting samples from selected loads with both the *loader operator(s)* and the *tipping house staff*.

Load selection

Contractor and SBWMA shall mutually agree on the random numbers table to be used, the process to select random truckloads for sampling, and the process to select specific cells from each truckload for sampling. When a target Collection vehicle arrives at the Designated Transfer and Processing Facility, the *scale house staff* will confirm the material stream and origin of the load (e.g., Single-Family Targeted Recyclable Materials from the north geographic area). The *scale house staff* will copy the sample cell number from the Collection vehicle selection form onto the appropriate sample placard and provide the placard to the driver. A cell number represents the location within a load from which a sample will be extracted and is defined by the map in Figure 1. Additionally, the *scale house staff* will record the load's net weight on the vehicle selection sheet.

The *scale house staff* will instruct the driver to place the placard in a highly visible place at the front of the truck (e.g., on the dashboard), and will direct the driver where to unload.

The placard is the signal to the *sampling crew* that a load selected for sampling has arrived. The placard is marked with a unique sample identification number and additional information used to randomly select cells, identify loads in photographs, and correlate net weights with sample details. Each placard will be coded according to its corresponding material stream and origin (e.g., 'O-S-01' indicates a load of Single-Family Organic Materials from the south geographic area).

Sample collection

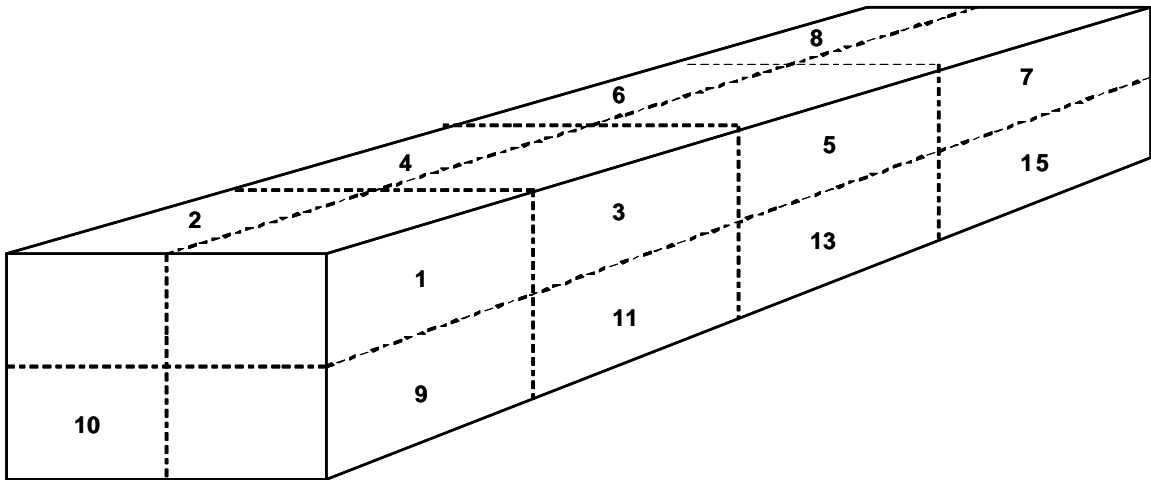
The *tipping house staff* will direct the driver to empty the entire truckload of material in an elongated pile on a designated dumping area. To the extent possible, this area shall be clean and the unloaded material shall be segregated from other loads on the tipping floor. The location of the unloading area may change during any given day.

The *sampling crew manager* will collect the placard from the *Contractor* and, once the load is emptied, will assist the *loader operator(s)* in locating the appropriate cell for the sample, as noted on the sample placard, using the map shown in Figure 1. The map shown in Figure 1 shall always be oriented with cells 1, 2, 9 and 10 representing the material contained in the front of the truck and cells 7, 8, 15 and 16 representing the material contained in the rear of the truck and unloaded first. The *loader operator(s)* will then extract the material in the selected cell. The *sampling crew manager* will guide the *loader operator(s)* to a designated tarpaulin, and will ensure that the proper quantity of material (one-hundred and twenty five (125) to two hundred and twenty five (225) pounds, depending on the material stream) is unloaded on the tarpaulin. A shovel may be used to add material from the bottom of the cell to ensure the sample includes some heavy and small material that the loader bucket failed to collect.

Pulling the tarpaulin taught is a basic test used to estimate sample weight. If it is determined that a sample is too heavy it may be lightened by removing vertical slices from the sample. If it is determined that a sample is too light it may be increased by adding more material. It is important to add or remove all material in the slice from the top to bottom, to ensure that both small, heavy, and loose materials and large, light, and bagged materials are added or removed.

Samples can be queued and stored on tarps until sorted, but samples shall be kept separate. The *sampling crew manager* will place the sample placard on its respective sample for a photograph and, if the sample is not immediately sorted, wrap the sample in its tarpaulin for later sampling. The *sampling crew manager* will photograph each load individually with the sample placard visible and legible.

Figure 1: Sixteen (16) Cell Grid



Note: Cells 12, 14 and 16 are below cells 4, 6 and 8, respectively.

Sample sorting

The *sampling crew manager* will record the sample identification number, as designated by the placard, on the tally form (see Appendix 2 for an example of this form).

The *sampling crew* will move the sample into the designated sampling/sorting area. The *sampling crew* and the *sampling crew manager* will sort the Contamination materials, as defined in Section 5, out of the load and into designated sort receptacles. The *sampling crew* will then weigh the Contamination materials and the *sampling crew manager* will record the weights on the tally form. The remainder of the load—all acceptable items—will be put into receptacles, weighed, and recorded by the *sampling crew manager* on the tally form.

The *sampling crew manager* is responsible for monitoring the homogeneity of material in each receptacle and ensuring the accuracy of the sorting process. For increased efficiency, the *sampling crew manager* shall be responsible for either pre-programming the scale with the receptacle tare weights, or recording the receptacle tare weights for subtraction later. At the end of each sampling day the *sampling crew* and *sampling crew manager* must comply with any Facility directions regarding cleaning the designated sampling/sorting area and storing sampling and sorting supplies.

Sample disposal

After the weight of all material in each sample is recorded on the tally sheet, the *sampling crew* and the *sampling crew manager* will move the sample to a location where it is safe and convenient for *the loader operator(s)* to remove.

Data management

At the end of each sampling day, the *sampling crew manager*, Contractor and SBWMA shall review all forms for accuracy and completeness to ensure timely resolution of any disputes or issues that may arise. The *sampling crew manager* will collect the vehicle selection sheets from the *scale house staff* and ensure that net weights have been recorded for each selected load.

To ensure the vehicle selection and tally forms are not lost before inputting the data into an electronic form, the *sampling crew manager* will make copies of all completed forms and will keep the copies in a separate place from the originals. The *sampling crew manager* will ensure a copy of the form is delivered within one (1) day to the person inputting the data into an electronic form.

5. Sorting categories

All loads identified for sorting shall be sorted and weighed into the following two (2) categories:

- 1) Contamination
- 2) Targeted Recyclable Materials, Source-Separated Targeted Recyclable Materials, Organic Materials, or Plant Materials

6. Calculations

Estimates of Contamination and Targeted Recyclable Materials, Source-Separated Targeted Recyclable Materials, Organic Materials, or Plant Materials will be calculated using a method that gives equal weighting or “importance” to each sample within a given stream. Confidence intervals (error ranges) will be calculated based on assumptions of normality in the composition estimates.

In the descriptions of calculation methods, the following variables will be used:

- i denotes an individual sample.
- j denotes the material type.
- c_j is the weight of the material type j in a sample.
- w is the weight of an entire sample.
- r_j is the composition estimate for material j (r stands for *ratio*).
- a denotes a region of the state (a stands for *area*).
- s denotes a particular sector or subsector of the waste stream.
- n denotes the number of samples in the particular group that is being analyzed at that step.

Estimating the Composition

The following method will be used to estimate the composition of waste belonging to the Commercial Source-Separated and Targeted Recyclable Materials, Commercial Organic Materials, Commercial Plant Materials, Single-Family Targeted Recyclable Materials, and Single-Family Organic Materials streams.

For a given stream, the composition estimate denoted by r_j represents the ratio of the component’s weight to the total weight of all the samples in the stream. This estimate will be derived by summing each component’s weight across all of the selected samples belonging to a given stream and dividing by the sum of the total weight of waste for all of the samples in that stream, as shown in the following equation:

$$r_j = \frac{\sum_i c_{ij}}{\sum_i w_i} \quad (1)$$

where:

- c = weight of particular component
- w = sum of all component weights
- for $i = 1$ to n , where n = number of selected samples
- for $j = 1$ to m , where m = number of components

For example, the following simplified scenario involves three samples. For the purposes of this example, only the weights of the component *carpet* are shown.

	Sample 1	Sample 2	Sample 3
Weight (c) of carpet	5	3	4
Total Sample Weight (w)	80	70	90

$$r_{Carpet} = \frac{5 + 3 + 4}{80 + 70 + 90} = 0.05$$

To find the composition estimate for the component *carpet*, the weights for that material are added for all selected samples and divided by the total sample weights of those samples. The resulting composition is 0.05, or five percent (5%). In other words, five percent (5%) of the sampled material, by weight, is *carpet*. This finding is then projected onto the stratum being examined in this step of the analysis.

The confidence interval for this estimate will be derived in two (2) steps. First, the variance around the estimate will be calculated, accounting for the fact that the ratio included two (2) random variables (the component and total sample weights). The variance of the ratio estimator equation follows:

$$\text{Var}(r_j) \approx \left(\frac{1}{n}\right)\left(\frac{1}{\bar{w}^2}\right)\left(\frac{\sum_i (c_{ij} - r_j w_i)^2}{n-1}\right) \quad (2)$$

where:

$$\bar{w} = \frac{\sum_i w_i}{n} \quad (3)$$

(For more information regarding Equation 2, please refer to *Sampling Techniques, 3rd Edition* by William G. Cochran [John Wiley & Sons, Inc., 1977].)

Second, precision levels at the 90 percent (90%) confidence level will be calculated for a component's mean as follows:

$$r_j \pm \left(z\sqrt{\text{Var}(r_j)}\right) \quad (4)$$

where z = the value of the z -statistic (1.645) corresponding to a 90 percent (90%) confidence level.

Appendix 1: Methodology checklist

Roles and responsibilities

- **sampling crew manager**—responsible for identifying selected samples, working with Facility staff and the *sampling crew*, quality control, and compliance with Facility regulations.
- **sampling crew**—responsible for sorting samples.
- **MRF manager**—responsible for coordinating with the *sampling crew manager*, SBWMA, and drivers.
- **scale house staff**—responsible for identifying selected vehicles, distributing sample placards, and directing drivers towards the sampling area.
- **tipping floor staff**— creating a designated sampling and sorting area, and ensuring segregation of selected loads in that area.
- **loader operator(s)**—responsible for segregating the selected load from other loads in the designated sampling and sorting area.
- **project manager**—responsible for managing the sampling process.
- **facility manager**—responsible for managing day-to-day operations at the Designated Transfer and Processing Facility.
- **Contractor**— responsible for informing the scale house staff of load origin and type and for passing sample placards to the sampling crew manager.

Advanced Preparation

- Project Manager*
 - Contact *MRF manager*
 - Confirm study dates
 - Ask *MRF manager* to update the following employees with the sampling plan:
 - scale house staff*
 - loader operator(s)*
 - tipping house staff*
 - Contractor*
 - Any other affected staff
 - Share study quotas
 - Request expected traffic volumes
 - Request safety expectations
 - Schedule safety training
 - Ask if there are any circumstances that may affect the study (i.e., weather, animals, site construction, etc.)
 - Obtain safety gear (Appendix 3)
 - Check safety gear
 - Obtain sorting equipment (Appendix 3)
 - Check sorting equipment
 - Develop and print daily sampling quotas (Appendix 2)
 - Develop and print vehicle selection sheets (Appendix 2)
 - Print tally sheets (Appendix 2)
 - Print on “Rite in the Rain” all-weather paper

- *Sampling crew and sampling crew manager*
 - Review material list
 - Review field forms
 - Review study requirements
 - Review unique site requirements
 - Review quotas

- **Arrival at Facility**
 - *Sampling crew:*
 - Arrive at Facility ahead of schedule
 - Participate in any required safety training
 - Don safety gear
 - *Sampling crew manager:*
 - Arrive at Facility ahead of schedule
 - Reviews logistics and expectations with MRF manager
 - Participate in any required safety training
 - Don safety gear

- **Scale House Coordination**
 - *Sampling crew manager:*
 - Explain the basic objective of the study to the *scale house staff*
 - Explain the responsibilities of the *scale house staff*
 - Explain the needs of the study despite breaks and shift changes
 - Encourage *scale house staff* to plan transitions for breaks and shift changes
 - Provide *scale house staff* with vehicle selection sheet
 - Discuss expected vehicle traffic
 - Ask *scale house staff* if this is reasonable
 - Provide *scale house staff* with sampling placards
 - Provide *scale house staff* with sampling crew manager's cell phone number

- **Tipping Floor Coordination**
 - *Sampling crew manager:*
 - Designate a designated sampling/sorting area on each tipping floor (2) with input from tipping floor staff and loader operator(s), meeting the following criteria:
 - *sampling crew* can see selected loads entering the tipping floor area
 - *Loader operator(s)* can visually communicate with sampling crew
 - *Loader operator(s)* can safely remove sorted loads
 - Approximately twenty (20) feet by twenty (20) feet
 - Explain and walkthrough the sampling process with both the *tipping house staff* and the *loader operator(s)*
 - Explain how trucks with placards are samples
 - Explain that samples must be dumped in a clean area, separate from other loads (called a designated dumping area)
 - Explain that the *sampling crew manager* is responsible for collecting the placard and responsible for identifying the selected cell of the load that the *loader operator(s)* will sample
 - Explain that each sample is between one hundred and twenty five (125) and two hundred and twenty five (225) pounds

- Explain that the *sampling crew manager* will be responsible for guiding the *loader operator(s)* to the appropriate tarpaulin
 - Note: Explanation will need to be repeated for each designated sorting area
 - *Sampling crew:*
 - Set up designated sampling sorting area one
 - Sorting table
 - Baskets
 - Digital scale(s)
 - Set up designated sampling sorting area two
 - Sorting table
 - Baskets
 - Digital scale(s)
- **Sample Collection**
 - *Tipping house staff:*
 - Direct load to a designated dumping area
 - *Sampling crew manager:*
 - Collect placard from *Contractor*
 - Direct *loader operator(s)* to pre-selected sampling cell
 - Direct *loader operator(s)* to designated tarpaulin
 - Signal *loader operator(s)* with tipping instructions
 - Pull tarp to test for appropriate sample weight
 - Place placard in the load
 - Photograph load
 - Placard should be visible and legible
 - Wrap and segregate load until ready to sort
 - *Loader operator(s):*
 - Pinch/scoop sample, as directed by the sampling crew manager
 - Tip sample on designated tarpaulin, as directed by the *sampling crew manager*
 - *Sampling crew:*
 - May assist *sampling crew manager* at any point
- **Sample Sorting**
 - *Sampling crew:*
 - Move the sample into the designated sampling/sorting area
 - Sort the sample
 - Sort Contamination materials into designated baskets
 - Assist the *sampling crew manager* with weighing the baskets
 - Assist the *sampling crew manager* with weighing the remainder material
 - *Sampling crew manager:*
 - Record the sample identification number onto the tally sheet
 - Assist the *sampling crew* in moving the sample into the designated sampling/sorting area
 - Sort the sample
 - Sort Contamination materials into designated baskets
 - Weigh Contamination baskets and record weights on the tally sheet
 - Ensure homogeneity of materials
 - Weigh remainder material and record weights on the tally sheet
 - Ensure all Contamination materials are removed

- **Sample Disposal**
 - *Sampling crew manager and sampling crew:*
 - Dispose of all materials in a designated disposal area
 - *Loader operator(s):*
 - Remove disposed materials when it is safe and convenient

- **Data Management**
 - *Sampling crew manager:*
 - Collect vehicle selection sheets from the *scale house staff*
 - Review all forms for accuracy and completeness
 - Vehicle selection sheet(s)
 - Tally sheet(s)
 - *Project Manager*
 - Check all forms for accuracy and completeness
 - Vehicle selection sheets(s)
 - Tally sheet(s)
 - Copy all data forms
 - Store copies separate from the originals
 - Download pictures from camera
 - Provide copies of data for electronic input
 - Ensure data entry is checked for accuracy

Appendix 2: Example Data collection forms

Appendix 2 consists of copies of each of the following three (3) data collection forms

- Collection vehicle selection sheet
- sampling placard
- tally sheet

Figure 2: Example Collection Vehicle selection sheet


Vehicle Selection Sheet			Sampling Date: June 25, 2009						
SBWMA: Contamination Sampling			1 st Load Arrives At: 9:00:00 AM						
			Notes: Betty working at scale house, helped with sampling before.						
Truck No.	Load No.	ETA	Sampling Population	Sample ID	Sample Cell	Vehicle Type	Number of samples	Net Weight (pounds)	Notes
2238	1	9:00	CSS - N	CSS-1	3	FL	1		
1318	1	9:00	RSS - S	RSS-1	8	FL	1		
1310	1	10:30	CO - E	CO-1	4	FL	1		
2305	2	12:00	CO - W	CO-2	2	FL	1		
1227	1	13:00	CSS - E	CSS-2	1	FL	1		
1313	1	13:00	RO - E	RO-1	9	FL	1		
1308	1	13:30	CGW - N	CGW-1	7	FL	1		
2240	1	14:00	CGW - N	CGW-2	1	FL	1		
2243	2	14:00	RO - W	RO-2	7	FL	1		
1317	2	15:30	CSS - N	CSS-3	2	RO	1		
Multi Sample Loads									
1319	2	15:30	CGW - E	CGW-3&4	6,13	FL	2		
1309	2	15:30	RSS - N	RSS-2&3	9,1	FL	2		
CONTINGENCY SAMPLES									
1316	1	11:30	RSS - N		7	FL	1		
2244	2	11:30	RO - W		14	FL	1		
Any Additional Samples or notes?									


Figure 3: Example Sampling placard

Date: _____
Jurisdiction: _____

RSS - 1

Cell 13

Figure 4: Example Tally sheet

South Bayside Waste Management Authority: Contamination Sampling								
CONTAMINANTS	Container 1				DATE:		SAMPLE ID:	
	Container 2				SAMPLING POPULATION:		SAMPLE WEIGHT:	
	Container 3							
	Container 4				TIME:		TRUCK NO.:	
	Container 5				LOAD NO.:		CELL NO.:	
	Container 6							
	Container 7				NOTES:			
	Container 8							
	Container 9							
	Container 10							
ACCEPTABLE	Container 1							
	Container 2							
	Container 3							
	Container 4							
	Container 5							
	Container 6							
	Container 7							
	Container 8							
	Container 9							
	Container 10							

Appendix 3: Equipment list

Appendix 3 provides a list of equipment necessary for all sampling and sorting activities. Extra safety equipment should be available to ensure the safety of observers or others at the sorting site.

Sorting equipment:

- approximately twenty (20) identical sorting containers (e.g. laundry baskets or five (5) gallon buckets)
- square point shovels
- rakes
- push brooms
- digital scale, battery powered (weigh up to four hundred (400) pounds, accurate to one-tenth (1/10) of a pound)
- spare batteries for the scale
- fifteen (15) to twenty (20) ten (10) foot by twelve (12) foot or similar size tarps
- clipboards
- field forms printed on Rite in the Rain paper
- permanent markers
- mechanical pencils
- tape measures
- utility knives, scissors
- duct tape
- ten (10) to fifteen (15) Carts
- ten (10) to fifteen (15) plastic receptacles
- four (4) metal eight (8) foot by twelve (12) foot tables
- one (1) metal work desk with drawer
- erasable placards and markers
- digital camera with extra flash card
- moisture probe
- six (6) special pallets with solid tops
- three (3) six cubic yard Bins
- three (3) three cubic yard Bins

Safety equipment:

- dust masks (N-95 or better)
- safety glasses
- hearing protection
- steel-toed work boots
- puncture resistant gloves
- glove liners (latex or nitrile)
- leather work gloves
- reflective safety vests (Brite Lime)
- hard hats
- safety/medical kit
- fire extinguisher
- disinfecting soap, paper towels, antiseptic towels
- water
- rubber aprons or Tyvek protective garments

Quarterly Contamination Measurement Policies and Procedures March 15, 2011

Purpose

The *Contamination Measurement Policies and Procedures* ("Policies and Procedures") provides additional and clarified policies and procedures necessary to perform the sampling methodology described in *Attachment E-2 Contamination Measurement Methodology: Quarterly Protocol* ("E-2"). The Policies and Procedures document mainly serves to address particular areas of such importance to the affected parties and to the successful completion of the sampling process that they should be agreed upon prior to commencing sampling. This document may be considered a "final draft" for the purposes of the performing the first quarter 2011 sampling. Learnings from the first quarter sampling period may suggest a need to revise this document for subsequent sampling periods. Integrated within this document is the previously approved Sample Selection Protocol content.

Route and Sample Cell Selection

"Routes," "Loads" and "Vehicles"

In describing the load selection methodology, the term "route" is used in place of "load" as it is the routes that shall be randomly selected for sampling. The first load of each randomly selected route will be purposely chosen for sampling. The process below describes the methodology for randomly selecting a route from a particular material stream for a given day of the week. The Sample Selection Protocol does not refer to collection vehicle numbers associated with the collection routes as vehicle numbers may change due to, for example, scheduling changes and vehicle repairs.

Sampling Population

Load samples shall be collected from each material stream as described in E-2, Section 1. Each of the E-2 identified materials streams are collected via multiple routes identified by route number. For the purposes of sampling, the route associated with each sampling population will be considered free of any materials that are not a part of the associated sampling population. For example, residential recyclables should not contain any commercial recyclables.

Random Route Selection Tool

Random selection of routes to be sampled can be achieved via a variety of methods. The method chosen for the Sample Selection Protocol utilizes Microsoft Excel's random number generating function to provide a randomized rank ordering of the routes provided by Recology. Specifically, the Excel RAND and RANK functions are used to generate a sequence of randomly ordered, non-duplicated integers in the range determined by the number of routes in a given list. These numbers are associated with the route numbers for each material type, and are used to determine the selection order of the routes. This randomization function and the resulting selections are presented in the form of a simple Microsoft Excel Workbook ("Randomizer"). To aid in transparency, the formulae used in randomizing selection involve standard Excel functions. No scripting (programming) is used to achieve the results. See *Figure 1* for an example format of the resulting selections for one material stream and one day of the week.

On March 4, 2011 or ten (10) business days prior to the first sampling period, the Randomizer will be made available, electronically, to Recology and the SBWMA to review and approve the integrity of its random selection formulae. Any necessary revisions will be provided in writing to the contamination sampling contractor within two (2) business days of receipt of the Randomizer. Revisions to the Randomizer will be integrated and a final Randomizer for use in all future sampling periods will be delivered electronically to Recology and the SBWMA for their records.

Figure 1: Example Format of Route Selection Results

Material Type: Residential Recyclables				
Day: Monday				
Random Number	Selection Order	Route #	Cell #	Alternate Cell #
9049212...	5	1820	6	14
4546872...	2	1821	14	2
6709992...	4	1822	2	9
1132389...	1	1823	9	11
5943212...	3	1824	11	13

Random Route Selection Methodology

At least fifteen (15) business days prior to the actual application of the Sample Selection Protocol in any given quarter, Recology will provide to the contamination sampling contractor a current route list in the format set forth in the Randomizer. This list will be used for making route selections using the process identified herein. This route list will contain route numbers organized by material type and, if feasible, will indicate the volume of material collected from the individual jurisdictions associated with each route day. Recology has agreed to explore this and tonnage data will be included with an updated route list if feasible.

Upon receipt of the route list, the contamination sampling contractor will populate the Randomizer with the route data. The populated Randomizer will then be delivered to the SBWMA and Recology to ensure accurate integration of the route data. The SBWMA and Recology will have two (2) business days to review the data and provide any necessary revisions to the contamination sampling contractor.

After approval of the integrated data, the contamination sampling contractor will execute¹ the randomization function of the Randomizer once. This step will rank the routes for each day of the sampling period. The highest ranked routes (with one (1) being the highest) will be used to create sampling groups. *Table 1* indicates the number of routes in each sampling group and the approximate number of samples to be selected from each group (in parentheses). Routes in each sampling group will be sampled in the order of each collection vehicle's arrival at the facility until the desired number of samples is obtained. If the number of routes associated with a particular sampling population is less than the indicated size of the sampling group, all routes associated with that population will compose the sampling group. In other words, if the ideal sample group size is six (6) but there are only four (4) routes total in the sampling population, then the sample group will comprise four (4) routes. This is the case for the Commercial Organic Materials routes. The method described above helps ensure that circumstances such as communication errors, vehicle failures and simultaneous arrival of selected routes/vehicles will not impact the ability to collect a sufficient number of samples of each material type per day. This method will be used by the contamination sampling contractor to develop its Collection Route Selection Sheet.

¹ The Randomizer will create a random sample order set every time the user presses the F9 function key. The function key triggers what is called a "volatile" function in Excel, producing a sequence of random numbers, each to a near infinite decimal place. These random numbers are then sorted by value in ascending order using the Microsoft Excel function "RANK." The order changes every time the volatile random number function is activated. Note that activation of the random number function can also be triggered by any alteration to the Excel workbook (e.g., typing in a spreadsheet cell, changing cell sizes, etc.). The sample selection order is therefore randomized by a two step process: a random number generator and a sample ranking according to the value of the random numbers.

Table 1 provides the approximate number of routes which will be selected from the ranked ordered routes and sampled for each day of the week. The number of routes selected for sampling on each day will be adjusted as necessary to accommodate for route timing and unforeseen circumstances, and to ensure that the required number of total samples for the sampling period are obtained and sorted.

Table 1: Approximate Number of Routes Sampled Per Day by Material

Material	Mon	Tue	Wed	Thurs	Fri	Total Samples By Material
Commercial Targeted Recyclable Materials	6 (3)*	6 (3)	6 (2)	6 (2)	6 (2)	12
Commercial Organic Materials	6 (3)	6 (3)	6 (2)	6 (2)	6 (2)	12
Residential Targeted Recyclable Materials	6 (3)	6 (3)	6 (2)	6 (2)	6 (2)	12
Residential Organic Materials	6 (3)	6 (3)	6 (2)	6 (2)	6 (2)	12
Commercial Plant Materials	1-2 (1-2)	1-2 (1-2)	1-2 (1-2)	1-2 (1-2)	1-2 (1-2)	6
Total Samples Each Day	13-14	13-14	9-10	9-10	9-10	54

*"6" refers to the size of the sample group and "(3)" refers to the approximate number of samples to be taken.

Random Cell Selection Methodology

Using a process similar to that used for route selection, the Randomizer will also be used to select a primary sample cell out of a possible sixteen (16) cells (see cell grid diagram in Figure 1 in E-2 documentation) for association with each route. It is not anticipated that an alternate sample cell will be required; however the Randomizer will generate an alternate cell for each route to provide a contingency. The alternate cell may be required if, for example, the integrity of part of a sample load is impacted by accidental unloading of a separate load onto part of the sample load or if, as suggested in the E-2 (Figure 2) "Example Collection Vehicle Selection Sheet," there may be a need to take multiple samples from a sample load as may be appropriate, if agreed upon during the sampling period by Recology and the SBWMA, to ensure that the desired number of samples are obtained without having to extend the number of days in the sampling period.

Observation and Record Keeping

If a representative of the SBWMA or Recology wishes to observe the randomization process, this event must be scheduled to take place after integration of Recology-provided route data and at least seven (7) business days in advance of any given sampling period. The observation of the randomization process will take place at the contamination sampling contractor's offices.

In order to ensure that the selected routes are not disclosed to the SBWMA and Recology in advance of the sampling period, route numbers will be hidden during the randomization observation process. Observers will be limited to viewing the rank changes and noting the timing of the generation of the PDF. The randomized results will be preserved for audit purposes by saving the Excel workbook and associated worksheets as a PDF file.

Considerations

Commercial Plant Materials

These materials are, in most cases, currently collected on the same routes that collect commercial organics. The fact that commercial organic and commercial plant materials are not collected separately

under normal operating conditions presents a challenge in conforming to the E-2 protocol. Either a deviation from the E-2 protocol (to allow sampling of 4 streams instead of 5) will be required, or a new sampling protocol involving special collections will need to be developed in order to provide the samples required in E-2.

In an effort to conform to E-2 which requires sampling of separate Commercial Organic Materials and Commercial Plant streams, plant material roll-off drop boxes and compactor ("roll-off containers") accounts will be used to select loads for sampling during the first quarter 2011 sampling period. (This approach will be reviewed for effectiveness after the first quarter 2011 sampling period and revised as necessary.). Because many roll-off accounts are serviced "on-call," the associated routes will not be subject to random sampling. Rather, Recology will ensure that six (6) roll-off containers will be available for sampling over the course of the sampling period (i.e., Monday through Friday). In addition, Recology will, to the best of its ability, spread the targeted loads out over the course of the sampling period week. The contamination sampling contractor will still provide randomized sample cells regardless of whether route information is available to include in the Randomizer. In the event that there is no available route information, the contamination sampling contractor will simply use the randomized sample cells associated with the "Selection Order," in the Randomizer. For example, the first plant materials only roll-off container to enter the facility will be identified as number "1" in the selection order and the corresponding sample cell will be used.

Routes Using Specialized Trucks for "Hard-to-Service" and "Very-Hard-to-Service" Accounts

These routes and their associated smaller capacity collection vehicles are given equal weight in the route selection process. The methodology for sampling and sorting these smaller load sizes, including the size of the cell grid used, will be addressed in the CMQP. The SBWMA and Recology agree to revisit whether or not it makes sense to reduce the number of cells used for the smaller capacity trucks after the Q1 sampling period.

Jurisdictional Representation in Sample Selections

There is potential in a given sampling period for random selection of routes to result in a set of sampled materials which may not be representative of the materials generated by all jurisdictions. This should be balanced over time as more samples are sorted. For the purposes of the Sample Selection Protocol, jurisdictional representation will be observed by the SBWMA over four (4) sampling periods in order to determine if a modification to the Sample Selection Protocol will be required for the following calendar year.

"Multi-Tip" Routes

The Sample Selection Protocol does not provide a methodology for selecting different loads from "multi-tip" routes—routes which may tip their loads at the Shoreway Environmental Center more than one time a day due to seasonality or other variables. For the purposes of the Protocol, the first load of the day for any given selected route will be targeted for sampling. The Protocol will be assessed after gathering data from four (4) quarterly sampling periods to determine if a protocol modification is needed.

"Start Up Helper Routes" Using Relief Drivers

Recology identified the Start Up Helper Routes #623, #631, #632, #633, #634, #635 and #636 as commercial recycling accounts. These routes will be included in the route selection process.

Incomplete Routes

Routes selected for sampling may be interrupted or commingled with other route loads due to:

- Collection "coverage" for a disabled collection vehicle by a vehicle from a different route.
- A malfunctioning collection vehicle which tips its load before completing most of its route
- Driver Illness

Recology will immediately inform contamination sampling contractor of route delivery issues. Alternate routes will be selected where necessary.

Sampling Calendar

Section 3 of E-2 indicates that quarterly sampling events will not be scheduled five (5) days immediately before or after Holidays. Quarterly sampling events are also to be completed by the last day of the applicable quarter. To allow for completion of a quarterly sampling event impacted by an act of god, equipment failure or other unforeseen circumstances, the SBWMA and Recology may mutually agree to schedule a sampling event as necessary.

Sampling Accuracy

The SBWMA and Recology accept that any agreed upon reduction in the number of quarterly samples may impact the statistical confidence levels for any given sampling period.

Materials Sorting List

The sampling crew will use the Appendix A: Materials Sorting List as a guide in making determinations as to whether particular sample materials are contaminants. Appendix A does not and cannot address all possible encountered materials or combinations of materials. It is a working document which will be refined over successive sampling periods. In instances where Appendix A does not provide an obvious determination as to whether a particular material or combination of materials is a contaminant, the sampling crew will use its best judgment to make that determination unless designated representatives of the SBWMA and Recology are present to make that determination prior to completion of sorting for any given sample.

Load/Route Identification

Load or route identification for sampling is addressed broadly in E-2. The detailed process for ensuring the identification and "capture" of the randomly selected routes at the scale house or upon entry to the transfer station will be addressed administratively by the MRF and transfer station managers in coordination with the sampling crew manager. It should be noted though that the scale house attendant carries the responsibility of directing selected route drivers not to unload their load unless directed to do so, and for ensuring that information contained in the Collection Route Selection Sheet is not disclosed to collection vehicle drivers.

Aside from capturing routes and directing drivers, the scale house attendant will also be responsible for making collection vehicle selection decisions to ensure that sampling quotas as defined in Table 1 are met. This work will involve keeping a record of the *number* of routes within each *sampling group* which have been selected and directed to the designated sampling/sorting area. It will also involve effectively coordinating the timing of sampling the different material types with the sampling crew manager. This is important as the various material types tend to arrive in concentrations at different times of the day and the sampling crew will want to set up and perform its sampling and sorting operations to align with these arrival times. It is expected that this process will be refined during the first quarter 2011 sampling period.

Designated Sampling/Sorting Areas and Tipping Floor Coordination

Prior to and during each sampling period, the MRF and transfer station managers will create and maintain designated sampling/sorting areas on the MRF and transfer station tipping floors as identified and developed in pre-sampling period consultations and sampling dry runs. It is understood that these areas may need to be modified in subsequent periods after completion of the MRF and transfer station facilities.

The level of traffic and limited space in both the MRF and transfer station, in part, resulting from temporary, in-progress construction of these facilities, may in some cases, impact the management of sample loads. For example, sample loads may need to be shifted using a loader to allow for influxes in vehicle traffic and materials. In such cases, best efforts will be made to maintain the integrity of loads as they were originally unloaded from the collection vehicle. Similarly, best efforts will be made to ensure that materials from other loads do not contaminate selected sample loads.

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Limited available space for “stockpiling” multiple sample loads which arrive simultaneously may require selected route drivers to queue and stage their collection vehicles in a designated area until individual loads can be unloaded, sampled and the area cleared for the next load. Failure of drivers to wait as necessary for the sampling crew manager to direct unloading of collection vehicles may result in insufficient sample collection and an extra day(s) of sampling at Recology’s expense.

Sample Collection

Unloading

While it is the responsibility (as defined in E-2) of the tipping floor staff to direct drivers to empty their entire truckload of material in an elongated pile on a designated dumping area, the sampling crew manager will need to assume control over this activity, in part, to ensure that the integrity and identity of loads are maintained. Tipping floor staff will be made available in the MRF and the transfer station during the sampling period to provide assistance to the sampling crew manager such as in cases of simultaneous arrival of selected routes.

The Sampling Crew Manager will instruct the driver to use his/her knowledge of the type and volume of the load to unload the materials in a form that best approximates the cell grid identified in E-2. For example, the driver will make best efforts to ensure that the load is not long and flat or piled high on itself.

Sample Cell Extraction

Both the loader and the excavator heavy equipment will be used as available and at the discretion of the sampling crew manager to obtain the most precise cell extractions possible. As witnessed during the sampling dry runs, these “tools” are inherently imprecise. The sampling crew manager and loader operator will make best efforts to extract sample cells in a manner to that most closely adheres to the methodology described in E-2.

In situations where using the 16 cell (2w x 2h x 4l) grid (as described in E-2: Figure 1) to define a sample cell would not likely produce a sufficient sample cell weight (such as might be the case with a load from a specialized truck used to service hard-to-service accounts), the sampling crew manager, at his/her discretion, will use a modified cell grid. Because randomly selected cell numbers in the range of 1-16 are generated for each randomly selected route, any reduction in the number of cells in the sixteen cell grid requires a methodology for converting the existing random number to an alternate cell number existing in the modified cell grid. Figure 2 is a conversion table for cell grids containing 12 cells (e.g., 2w x 2h x 3l), 8 cells and 4 cells. If, for example, an 8 cell grid is required for a particular route’s load, but the randomly selected cell for the route is 14, the corresponding cell in an 8 cell grid would be 6. In the case of a 12 cell grid, the numbers 13, 14, 15, and 16 are assigned to top corner, top middle, bottom middle, and bottom corner cell positions in a 12 cell grid. All modified grids will be renumbered in the same format defined graphically in E-2: Figure 1.

Figure 2: Sample Cell Conversions

# of Cells in Modified Grid					=
					#
4		8		12	
				16	12
					11
					10
				15	9
			16		8
			15		7
			14		6
			13		5
16	12	8	12	14	4
15	11	7	11		3
14	10	6	10		2
13	9	5	9	13	1

Sample Weight Estimating

As indicated in E-2, pulling the tarpaulin taught is the basic test to be used to estimate sample weight. This method of estimating is prone to inaccuracies and estimates which may be revealed in final (post sorting) sample weights outside of the 50 pound weight range indicated for the various material types. Other more accurate alternatives for weight estimation have been considered, but have been determined to be too potentially time-consuming and logistically challenging for the purposes of the first quarter 2011 sampling period. The “pull” (or manual lift) method will be used despite the potential for misestimating. Best efforts will be made to err on the side of exceeding the weight range while taking into consideration the additional labor time associated with sorting heavier samples. The sample weight estimating effort will be considered successful if the average weight for all samples within a sampling population falls within the population’s established weight range. After the first quarter 2011 sampling period, the actual sample weights will be reviewed to determine if an alternative weight range test should be considered for subsequent sampling periods.

If, as a result of a pull test, a sample is determined to be too heavy or too light the following procedure will be used to lighten or increase its weight. As with weight estimation, it is understood by all parties that this procedure is highly subjective and imprecise due to the non-standard and amorphous nature of the materials being sampled. Further, the amount of effort placed into such a procedure must be balanced with the need to expeditiously process and sort a large volume of samples and materials.

If a sample is determined to be too heavy, it will be lightened by removing vertical slices from the sample. The sampling crew manager will remove two (2) slices each representing half of the estimated weight to be removed from the sample with the initial slice taken from side of the sample closest to the corner of the tarpaulin to which the tarpaulin’s drawstring is attached and the second slice taken from the opposite corner of the tarpaulin. In cases where, for example, a large bag or large object such as a tree limb spans the location in which the slice would be initiated, such objects will not be “sliced into”. Instead, the material nearest the corner clock-wise from the initial tarpaulin corner will be sliced. If a load, due to its composition, is inherently difficult to be sliced, material will be pulled off of the pile using an appropriate tool. A second pull test will be performed after the slices are removed. If it is determined that additional material needs to be removed, the procedure described above will be repeated.

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If a sample is determined to be too light, the excavator operator will be instructed to extract additional material from the vicinity of the sample cell. Best efforts will be made to add or remove all material in a slice from the top to bottom, to ensure that both small, heavy, and loose materials and large, light, and bagged materials are added or removed.

Only after a the sampling crew manager has informed the loader operator that the necessary amount of material has been extracted for sampling will the loader operator remove the remainder of the load for processing by the facility. The loader operator will then ensure that the designated sample selection area is, to the extent possible, clean and free of materials from the previous sample.

Appendix A: Materials Sorting List March 18, 2011

The Materials Sorting List is a working document to be used in gaining clarity regarding acceptable materials and contaminants as the definitions provided in the Franchise Agreement do not, in all cases, provide the level of specificity needed to make sorting decisions. The document will ultimately serve the additional purpose of being a training and reference tool for sorters.

The organization of the document including the “Yes’s” and “No’s” side by side helps in understanding (especially for sorters) that there are some subtle differences between certain items in the various categories (e.g., plastics). “Yes’s” refer to the items to the left. “No’s” refer to the items on the right, except in the Irregular and Combined materials section where the right column is for notes. Green is used to indicate organic materials and blue to indicate recyclable materials.

ORGANIC MATERIALS			
	Acceptable?		
Food scraps including: <ul style="list-style-type: none"> • Meat including bones • Fish • Vegetables • Fruit, including pits • Grains • Dairy • Egg shells 	YES	NO	<ul style="list-style-type: none"> • Cooking oil
Paper products soiled with food including: <ul style="list-style-type: none"> • Coffee filters • Paper cups (e.g., chain store coffee cups) • Paper plates • Paper ice cream containers • Paper bags • Paper napkin and paper towels • Tissue paper including used paper • Paper tea bags • Greasy pizza boxes • Waxed cardboard and paper • Cardboard egg cartons • Wine corks (made from cork, not plastic) 	YES	NO	<ul style="list-style-type: none"> • Juice or milk cartons made of poly-coated paper (i.e., standard milk cartons) • Juice or soy milk type boxes with foil liner (e.g., Tetra-Pak)
Plant materials including: <ul style="list-style-type: none"> • Branches and brush • Tree trimmings • Leaves • Flowers and floral trimmings • Grass cuttings and weeds 	YES	NO	<ul style="list-style-type: none"> • Palm fronds • Sod • Cactus • Yucca
“Bioplastics” including: <ul style="list-style-type: none"> • Biodegradable plastic food service ware including compostable clamshells, cups and utensils clearly labeled “compostable” or “biodegradable” • Compostable bio-plastic bags (must have BPI-certified logo) 	YES	NO	<ul style="list-style-type: none"> • Regular plastic trash bags or compostable bags which <u>do not</u> have a BPI-certified logo (These large plastic bags containing organics will be opened/broken to sort materials and the bags will be considered contaminants. Small bags such as Safeway grocery bags with unknown contents will not be opened and will be considered contaminants in entirety) • Styrofoam or plastic “clam shell” containers • Utensils which are not clearly labeled “compostable” or “biodegradable.”

<p>Wood pieces (unpainted, untreated) including:</p> <ul style="list-style-type: none"> • Small scraps of lumber • Corks (made from cork bark) • Popsicle sticks • Chopsticks • Plywood (unpainted, non-laminated) • MDF/composite wood (unpainted, non-laminated) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Pressure treated and painted wood • Plastic corks • Laminated or painted MDF or plywood
<p>Other:</p> <ul style="list-style-type: none"> • Pieces of <u>unpainted</u> wallboard (also called sheetrock and drywall) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Animal excrement • Diapers • Brick, concrete, rock, gravel, large quantities of dirt, concrete (If plant materials are combined with more than 50% inert materials such as dirt, the entire amount should be considered inert.) • Liquids and ice • Recyclable materials (e.g., glass, aluminum, paper, plastics 1-7)
<p>RECYCLABLE MATERIALS</p>			
		<p>Acceptable?</p>	
<p>Paper including:</p> <ul style="list-style-type: none"> • Office paper • Computer paper • Newspaper including inserts and coupons • Newspaper in protective delivery bag • Magazines • Junk mail • Catalogs • Paperboard • Telephone books (e.g., "Yellow Pages") • Books • Colored paper • Construction paper • Packing paper • Legal pad backings • Shoe boxes • Envelopes (including those with plastic windows) • Sticky notes • Shredded paper (should be in paper bag labeled "shredded paper" but if in plastic bag, bag will be opened, removed and considered a contaminant) • Wrapping paper (non-metallic) • Paper bags • Department store bags with nylon rope handle • Corrugated cardboard (non-waxed) • Cardboard egg cartons • Cereal and other similar food boxes • Paper milk and juice cartons (including those with plastic spouts) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Clumped, wet paper ("wringable", exhibiting free-flowing liquid and drips is considered contaminated; dampness and sheets of paper loosely stuck together is acceptable) • Paper cups (e.g., coffee cups) • Juice, soup or soy milk boxes with foil liners (e.g., Tetra-Paks)

<p>Glass including:</p> <ul style="list-style-type: none"> • Glass bottles and jars (and metal lids) of any color including: brown, blue, clear, and green (must not contain free flowing liquid or food clumps) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Drinking glasses (made of glass) • Mirrors, windows and any glass that is not a bottle or jar • Light bulbs • Glass bottles and jars containing free flowing liquid or food clumps
<p>Metal including:</p> <ul style="list-style-type: none"> • Aluminum cans including food and beverage containers • Aluminum foil and trays (if clean) • Small pieces of scrap metal weighing less than 10 lbs (<u>NO</u> chain, cable, wire, banding, hand tools, or automotive parts) • Steel, tin and bi-metal containers including paint cans (if empty and dry) • Metal jar lids • Aerosol spray cans (if empty) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Wire, metal banding, chains, cables • Automotive parts • Cans and aluminum foil and trays containing free flowing liquid or food clumps • Lidded paint cans that, as determined by “shake or weight,” have dried or liquid residuals (Cans will not be opened.) • Spray cans that, as determined by “shake or weight,” have residual contents (Cans will not be sprayed.)
<p>Plastics including:</p> <ul style="list-style-type: none"> • Plastic bottles, tubs and other containers including clam shells stamped with SPI code #1 through #7, except black plastic (must not contain food clumps or be more than ¼ full with liquid) • Plastic bottles, tubs and other containers (except black plastic) including clam shells not stamped 1-7 but which clearly can be identified as PET, HDPE, and PP. • Caps and lids from plastic bottles, tubs and other containers whether attached to the container or not • Plastic buckets • Plastic coffee cup lids • Strawberry baskets (even if not labeled 1-7 or PET, HDPE or PP) • Plastic cups including red “keg cups” and clear plastic cocktail cups (if labeled) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Styrofoam (e.g., Styrofoam egg cartons even if labeled #6 • Black plastic even if labeled 1-7 or PET, HDPE, PP • Any container not indicated as 1-7 <u>but</u> labeled LDPE, PS, or V. • Plastic forks, knives and spoons (cutlery) • Plastic bags including those used to contain recyclables • Plastic films (pallet wrap, shrink wrap, bubble wrap, food wrappers, etc.) • Juice pouches • Condiment packages • Plastic milk creamer containers • Plastic corks (and any other corks) • Plastic protective seals/wraps for containers • Plastic drinking straws • Garden hoses • Rubber bands • Diapers • Black plastic flower and nursery pots (colored, labeled are OK) • Plastic bottles and containers containing free flowing liquid or food clumps • Toys
<p>Inert Materials including:</p>		<p>NO</p>	<ul style="list-style-type: none"> • Ceramics • Concrete, asphalt, stones, bricks, rocks, sand, etc.

Other:		NO	<ul style="list-style-type: none"> • Hangers (plastic, metal, or wood) • Automotive parts and products • Tires • Batteries and cell phones • Wood • Household hazardous waste
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IRREGULAR AND COMBINED MATERIALS			
ORGANIC MATERIALS	Acceptable?	Handling / Sorting Notes	
Compostable clamshell, lined with foil and with mustard packet inside		NO	Reject all as contaminated
Materials in a non-BPI certified yet compostable bag	YES		Bag should be broken open and sorted
Small Safeway plastic grocery bag loosely tied with what appears to be various compostables and possible non-compostables		NO	Plastic bags obviously meant for compostables will be broken and sorted. Bags such as the one described or bags which contain obvious mixed contaminants and compostables will be rejected.
Clear-bagged paper janitorial products including what was presumed to be partially spent rolls of toilet paper generated when janitorial staff swap out partially used rolls for new, large rolls	YES		Bag will be opened and accepted as long material is not soiled with excrement or combined with cleaning products.
Unopened, bagged loaf of bread		NO	
Ziplocked bag of uncooked chicken		NO	
Book		NO	
Milk cartons stuffed with food scraps		NO	
Plant with a large root ball composed mostly of dirt	YES		
Large 8"x10"x24" block of wood that still fits in toter	YES		
Candle (paraffin, soy, beeswax)		NO	
Bananas with plastic branding banding	YES		
Poison Oak	YES		If encountered, a determination will be made whether to reject the load or the sample for a new load or alternative sample in order to ensure the safety of the sorters.
Vegetables with rubber band (broccoli)	YES		
Vegetables with wire band (lettuce)	YES		
Cheesecloth (textile)	YES		
Soiled dish towel (textile)	YES		
RECYCLABLE MATERIALS	Acceptable?	Handling / Sorting Questions	
Partially-filled glass jars and bottles from refrigerator clean-out (e.g., peanut butter jar with clumped residuals and half-filled salad dressing bottle)		NO	
Plastic container with paper mashed inside of it		NO	This is a "composite" material not easily processed.
Plastic soda bottle capped with residual liquid not exceeding ¼ of volume of container	YES		
Cardboard covered with packing tape	YES		
Newspaper with paint (used for paint masking)	YES		

Notepad with wire spiral binding		NO	
Pasta box with clear plastic window	YES		
Pasta box with residual pasta		NO	
Greeting cards that may contain audio electronics		NO	
Book with shrink wrap		NO	
Plastic container with obscured/destroyed recycling symbol	YES		
Newspaper in plastic delivery bag		NO	
Pharmaceuticals in recyclable containers		NO	
Magazine with infused glass (magazine was once wet, but dried, twisted and infused with glass fines)		NO	
Cardboard cereal box with plastic bag lining		NO	Though cardboard box acceptable, plastic bag is not. Entire item will be considered a contaminant.
Mostly glass fines commingled with other small recyclable and contaminating fines on the tarp after larger items are sorted	YES		During the dry run, for example, the residential recyclables sample had 13 lbs of commingled fines which were mostly glass but contained various small contaminants. Obvious contaminants will be sorted and the remaining fines will be considered recyclable.