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January 9, 2024

Mr. Steve Copp
Mirror Nova Scotia Limited
600 Otter Lake Drive
Lakeside, NS   B3T 2E2

Dear Mr. Copp,

Re: November 2023 Performance Audit
**   Otter Lake Waste Processing & Disposal Facility**

In November 2023, Strum Consulting was retained by Mirror Nova Scotia Limited (Mirror) to oversee a Performance Audit at the Otter Lake Waste Processing & Disposal Facility (Otter Lake) located at 600 Otter Lake Drive in Lakeside, NS.

The purpose of the Quarterly Performance Audit is to characterize the incoming residential waste stream and assess the percentage of compostable waste in this stream by mass. The audit also captures the incoming percentage of white goods and household hazardous waste (HHW). This letter report provides a summary of the Performance Audit completed on November 22, 2023.

Summary
Based on 10 samples being collected during the November 2023 Performance Audit, the total compostable waste percentage per area ranged from a minimum of 7.23% to a maximum of 19.49%. The total weighted Compostable Waste Percentage for the November 2023 Audit is calculated to be 13.13%.

Using the combined data collected during the May 2023, August 2023, and November 2023 Performance Audits, the total compostable waste percentage ranged from a minimum of 4.11% to a maximum of 39.25%. For the three quarterly audits completed to date, using the calculated 95% confidence interval, the percentage of Estimated Annual Compostable Waste is calculated to be between 8.21% and 13.06%, with a total weighted Compostable Waste Percentage value of 10.64%. The long-term cumulative goal (i.e., Performance Target) for Otter Lake includes compostable waste not exceeding 10% of the total amount of municipal solid waste landfilled, by mass.

Background
In March 2022, Nova Scotia Environment & Climate Change (NSECC) issued an updated Municipal Approval for Otter Lake, allowing the Front End Processor and Waste Stabilization Facility (FEP/WSF) to be deactivated upon the submission and acceptance of a Compliance Plan in accordance with the Approval requirements.

As per the Approval, the Performance Targets for Otter Lake include (but are not limited to) a long-term goal of compostable waste not exceeding 10% of the total amount of municipal solid waste landfilled, by mass. In September 2023, NSECC approved the following timeline for reaching this long-term Performance Target of maximum per cent compostable waste in the garbage stream:

- March 31, 2024 - 11.64% Compostable Waste
- March 31, 2025 - 10.81% Compostable Waste
- March 31, 2025 - 10.0% Compostable Waste

The Compliance Plan outlines how Performance Audits will be completed as a means to quantify the presence of compostable waste being received at Otter Lake. White goods and HHW were added to the audits based on comments received from NSECC after their review of the draft Compliance Plan.

Quarterly Performance Audits are completed to characterize the composition of compostable waste in the incoming residential waste stream.

Methodology

The methodology followed for the November 2023 Performance Audit reflects best practices identified in the Divert NS Waste Audit Manual and Field Procedures Guide (2017), as well as site specific processes established by Halifax Regional Municipality (HRM) and is summarized below.

Sample Load Identification

Residential curbside collection is divided into eight collection areas in HRM and condominium properties which are also considered to be residential. The geographic descriptions of the various areas are described in Table A, below.

Table A: Collection Area Descriptions

Waste Collection Area	Area Description
1	Halifax (former city limits); Spryfield
2	Dartmouth (former city limits)
3	Bedford; Hammonds Plains; Pockwock
4	Beechville-Timberlea; Herring Cove; Prospect; Peggy's Cove; St. Margaret's Bay to Hubbards
5	Sackville; Beaver Bank; Fall River; Waverley, Wellington; Dutch Settlement
6	Cole Harbour; Westphal; Cherry Brook; Eastern Passage; Cow Bay
7	Porters Lake; Lawrencetown; Chezzetcook; Lake Echo; Preston
8	Middle Musquodoboit; Musquodoboit Harbour; Elderbank; Sheet Harbour; Eastern Shore
Condos	Multi-residential style properties located in various communities

Based on residential curbside collection schedules for each specific collection area and the scheduled audit date and time, sample loads are selected ahead of time by HRM staff. A random number generator is used to choose which vehicle will be sampled.

The Alberta Provincial Waste Characterization Framework (2005) was reviewed and used to guide the number and weight of the samples to be collected. A minimum annual sample number of 40 samples is recommended, and as such, two samples from collection area 5 (Area 5) and one sample from all other curbside collection areas (Areas 1-4, 6-8, and Condos), for a total of 10 samples, were assessed as part of the November 2023 Performance Audit. To avoid skewing the annual data, any duplicate samples are averaged to give a single value per area for each audit.

The selected loads were visually inspected at the tip face upon arrival and photographs were taken as shown in the attached photo log (Attachment 1). The following information was recorded for each load:

- Collection vehicle and route numbers
- Date/Time of arrival
- Date/Time sample taken
- Gross and tare weight of truck
- Weight of sample
- Number/type of bulky items observed
- Names of persons taking the sample
- Date/Time of sorting

Sample Size

Photographs of the auditing process are provided as Attachment 1. Once emptied from the vehicle, multiple sections of the load were selected in order to draw a sample that was representative of the load. Each sample was to contain a mix of clear and black bags. Containers shown in Photo 6 (Attachment 1) were used to collect a sample between 90 and 135 kg.

Records documenting the identifying information of each vehicle sampled (scale tickets - Attachment 2) and the Performance Audit Record field data sheets (Attachment 3) are also attached to this report.

Material Categories

The categories that were used to define the different types of compostable waste are consistent with the Approval and are outlined below in Table B.

Table B: Compostable Waste Sorting Categories

Category	Sub-Category	Examples
Fibre	Newsprint/Paper	The Chronicle Herald, The Coast, Masthead News, The Cobequid/Dartmouth/Cole Harbour Wire, flyers
	Corrugated Cardboard/Boxboard	Consumer boxes (e.g., from appliances, storage, filing, and shipping)
Organics	Food Waste (Putrescible)	Whole vegetables, fruit, meat, fish, leftover food waste, eggshells, peels, oils, bones, fat, packaged food if most of if it consists of food
	Yard Waste	Grass, leaves, brush, branches, wood chips, soil

Materials which did not fall into one of the above noted categories were counted, weighed, and categorized as one of the following:

- Other garbage
- HHW including lead-acid (automotive) batteries, post-consumer paint products, ethylene glycol, used oil, used glycol, used oil filters, glycol containers, and oil containers.
- White goods (items such as toasters, microwaves, and coffee makers that would be mostly composed of metal materials that can be disposed of in garbage bags). It should be noted that the majority of white goods are not marketable from a recycling perspective.

Sorting Procedure

The sorting team consisted of several Mirror staff. All staff were briefed on the sorting protocols, including familiarity with example materials for each sorting category. Strum staff were designated as "Lead" and responsible for quality control and data collection.

The audit space consisted of an open area set up with tables for sorting waste materials, containers clearly labeled for each of the waste categories, and digital scales for weighing the waste materials. The containers used for sorting were weighed prior to commencing the audit and recorded on the data sheets to allow for net sample weights to be determined.

To maintain consistency, the Lead was responsible for weighing and recording the data on dedicated data sheets for each area, each time a container was filled. The process continued for each respective area until the full sample was properly sorted and weighed.

Previous Assessments

A baseline was developed through previous Performance Audits that were completed for the 2022/23 fiscal year in May 2022 (report dated June 22, 2022), August 2022 (report dated November 4, 2022), November 2022 (report dated February 2, 2023), and February 2023 (report dated April 6, 2023). Using the combined data collected during the 2022/23 quarterly Performance Audits, the total weighted Compostable Waste Percentage value of 12.41% was found.

Performance Audits for the 2023/24 fiscal year began in May 2023 (report dated June 26, 2023), with an additional assessment completed in August 2023 (report dated October 30, 2023).

November 2023 Performance Audit Summary

A summary of the November 2023 Performance Audit completed at Otter Lake is provided below in Table C. As previously mentioned, the November 2023 Performance Audit field data sheets containing the data collected respective to each waste collection area during the audit are attached to this report as Attachment 3.

Table C: November 2023 Performance Audit Results

Waste Collection Area	Category Percentage (%)							
	Garbage/ Residue	HHW	White Goods	Fibre - Newsprint/ Paper	Fibre - Corrugated Cardboard	Organics - Food/ Putrescible Waste	Organics - Yard Waste	Total Compostable Waste
1	89.40%	0.00%	0.53%	1.72%	2.38%	5.56%	0.00%	9.67%
2	83.33%	0.00%	1.46%	2.92%	2.92%	8.75%	0.00%	14.58%
3	80.21%	0.21%	0.11%	1.50%	3.10%	14.01%	0.11%	18.72%
4	86.91%	0.00%	1.68%	1.15%	2.30%	7.33%	0.00%	10.79%
5A	85.20%	0.36%	0.18%	1.44%	3.05%	8.43%	0.09%	13.00%
5B	88.12%	0.20%	2.67%	0.79%	4.75%	3.17%	0.00%	8.71%
6	83.11%	0.00%	0.41%	2.84%	2.57%	10.95%	0.14%	16.49%
7	91.96%	0.00%	0.54%	2.41%	1.25%	3.57%	0.00%	7.23%
8	80.81%	0.00%	0.00%	0.61%	2.63%	14.75%	0.00%	17.98%
Condos	79.75%	0.13%	0.00%	5.54%	4.18%	11.77%	0.00%	19.49%

Notes:

1. Total compostable waste percentage based on aggregate of four compostable waste category percentages.

Using the data in Table C above, the total compostable waste percentage ranged from a minimum of 7.23% (Area 7) to a maximum of 19.49% (Condos), based on the 10 samples collected during the November 2023 Performance Audit.

Average Total Compostable Waste Percentage
A summary of the Total Compostable Waste percentage for the May 2023, August 2023, and November 2023 Performance Audits completed at Otter Lake is provided below in Table D. Using this data, the Average Total Compostable Waste percentage was calculated for each area.

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November 2023 Performance Audit, Otter Lake Waste Processing & Disposal Facility
Mr. Steve Copp
Mirror Nova Scotia Limited

January 9, 2024

Project # 22-8641

Table D: Average Total Compostable Waste Percentage

Waste Collection Area	May 2023 Total Compostable Waste	Aug. 2023 Total Compostable Waste	Nov. 2023 Total Compostable Waste	Average Total Compostable Waste Per Area
1	11.23%*	4.11%	9.67%	8.34%
2	10.10%	4.27%**	14.58%	9.65%
3	15.89%	5.08%	18.72%	13.23%
4	26.53%	9.63%	10.79%	15.65%
5	6.28%	4.33%	10.86%***	7.16%
6	6.75%	4.40%	16.49%	9.21%
7	5.00%	6.26%	7.23%	6.16%
8	5.37%	12.47%	17.98%	11.94%
Condos	39.25%	18.52%	19.49%	25.75%

Notes:
1. * May 2023 Total Compostable Waste percentage for Area 1 is based on average of the two samples (1A and 1B) collected during the May 2023 waste audit.
2. ** August 2023 Total Compostable Waste percentage for Area 2 is based on average of the two samples (2A and 2B) collected during the August 2023 waste audit.
3. *** November 2023 Total Compostable Waste percentage for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

Using the data in Table D above, the average total compostable waste percentage ranges from a minimum of 6.16% (Area 7) to a maximum of 25.75% (Condos), based on a total of 30 samples being collected during the May 2023, August 2023, and November 2023 Performance Audits.

Overall Compostable Waste

November 2023

As shown in Table E below, given the November 2023 total compostable waste percentage per area and the three-year average of waste tonnage per area, the estimated compostable waste tonnage per year has been calculated. Using the total of the Estimated Annual Compostable Waste (6532.09 tonnes) and the three-year waste average total (49733.08 tonnes), the weighted Compostable Waste Percentage is calculated to be 13.13%. Supporting data is provided as Table 1 (Attachment 4).

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Table E: Estimated Annual Compostable Waste based on November 2023 Data

Waste Collection Area	Three Year Waste Average (Tonnes)	November 2023 Total Compostable Waste	Estimated Annual Compostable Waste (Tonnes)
1	10130.91	9.67%	979.66
2	6958.87	14.58%	1014.60
3	4479.73	18.72%	838.61
4	5415.09	10.79%	584.29
5	8615.57	10.86%*	935.65
6	5242.25	16.49%	864.45
7	2989.28	7.23%	216.12
8	3408.18	17.98%	612.79
Condos	2493.20	19.49%	485.92
TOTAL	**49733.08**	**N/A**	**6532.09**
Weighted Compostable Waste Percentage = (6532.09/49733.08) X 100 = 13.13%			

Notes:
1. Data used to calculate three-year average provided by Mirror and included tonnage from the fiscal years 2020/2021, 2021/2022, and 2022/2023.
2. *November 2023 Total Compostable Waste percentage for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

May 2023, August 2023, and November 2023

As shown in Table F below, given the average (May 2023, August 2023, and November 2023) total compostable waste percentage per area and the three-year average of waste tonnage per area, the estimated compostable waste tonnage per year has been calculated. Using the totals of the Estimated Annual Compostable Waste (5289.34 tonnes) and the three-year waste average total (49,733.08 tonnes), the weighted Compostable Waste Percentage is calculated to be 10.64%. Supporting data is provided as Table 2 (Attachment 4).

Table F: Estimated Annual Compostable Waste based on May 2023, August 2023, and November 2023 Data

Waste Collection Area	Three Year Waste Average (Tonnes)	Three Year Waste Average (% Total)	Average Total Compostable Waste % Per Area	Estimated Annual Compostable Waste (Tonnes)
1	10130.91	20.37%	8.34%	844.92
2	6958.87	13.99%	9.65%	671.53
3	4479.73	9.01%	13.23%	592.67
4	5415.09	10.89%	15.65%	847.46
5	8615.57	17.32%	7.16%	616.87
6	5242.25	10.54%	9.21%	482.81
7	2989.28	6.01%	6.16%	184.14
8	3408.18	6.85%	11.94%	406.94
Condos	2493.20	5.01%	25.75%	642.00
TOTAL	**49733.08**	**100.00%**	**N/A**	**5289.34**
Compostable Waste Percentage = (5289.34/49733.08) X 100 = 10.64%				

Notes:
1. Data used to calculate three-year average provided by Mirror and included tonnage from the fiscal years 2020/2021, 2021/2022, and 2022/2023.

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Descriptive Statistics

A descriptive statistical analysis was completed on the Estimated Annual Compostable Waste tonnage and the Estimated Annual Food/Putrescible Waste calculated per area from the November 2023 Performance Audit. The statistical analysis was completed using the Microsoft Excel Analysis ToolPak Descriptive Statistics analysis tool. Supporting data for the statistical analysis is provided as Tables 1 – 8 (Attachment 4).

Compostable Waste

At 95% confidence interval, the Estimated Average Annual Compostable Waste tonnage per area is calculated to be between 453.59 tonnes (lower bound) and 721.76 tonnes (upper bound). The confidence interval was calculated by subtracting/adding the calculated 95% confidence level (134.08) from the mean (587.67 tonnes).

By multiplying the lower bound (453.59 tonnes) and the upper bound (721.76) of the 95% confidence interval by nine (for each area), the Total Estimated Annual Compostable Waste would have a calculated range from 4082.31 tonnes to 6495.84 tonnes. By dividing the lower and upper range of the Total Estimated Annual Compostable Waste by the three-year waste average total (49733.08 tonnes), and multiplying the values by 100%, the percentage of Estimated Annual Compostable Waste is calculated to be between 8.21% and 13.06%.

Food/Putrescible Waste

At 95% confidence interval, the Estimated Average Annual Food/Putrescible Waste tonnage per area is calculated to be between 271.09 tonnes (lower bound) and 434.91 tonnes (upper bound). The confidence interval was calculated by subtracting/adding the calculated 95% confidence level (81.91) from the mean (353.00 tonnes).

By multiplying the lower bound (271.09 tonnes) and the upper bound (434.91 tonnes) of the 95% confidence interval by nine (for each area), the Total Estimated Annual Food/Putrescible Waste would have a calculated range from 2439.81 tonnes to 3914.19 tonnes. By dividing the lower and upper range of the Total Estimated Annual Food/Putrescible Waste by the three-year waste average total (49733.08 tonnes), and multiplying the values by 100%, the percentage of Estimated Annual Food/Putrescible Waste is calculated to be between 4.91% and 7.87%. The weighted Food Waste percentage is calculated to be 6.43%. Supporting data is provided as Table 6 (Attachment 4).

The above noted statistical analyses are based on a total of 30 samples collected during the May 2023, August 2023, and November 2023 Performance Audits. As additional sampling will be completed during future audits, it is expected that the statistical data will vary as more data becomes available.

Closure

This report was prepared by ▮▮▮▮▮▮▮▮▮▮▮▮, Junior Environmental Geoscientist, and was reviewed by ▮▮▮▮▮▮▮▮▮▮▮▮, Senior Environmental Geoscientist. Should additional information become available, Strum requests that this information be brought to our attention immediately so that we can re-assess the conclusions presented in this report.

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This Report and any use of the Report is subject to the terms herein (see attached Statement of Qualifications and Limitations).

If you have any questions, please contact us.

Thank you,

Statement of Qualifications and Limitations

This Report (the "Report") has been prepared by Strum Consulting ("Consultant") for the benefit of Mirror Nova Scotia Limited ("Client") in accordance with the agreement between Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations, and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations")
- represents Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports
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- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued
- must be read as a whole and sections thereof should not be read out of such context
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Attachment 1
Photograph Log

Photo 1: Waste load collected from HRM collection Area 1.
Photo taken on November 17, 2023.

Photo 2: Waste audit sample collected from HRM collection Area 1.
Photo taken on November 22, 2023, during waste audit.

Photo 3: Sorting process and food waste bin of HRM collection Area 1.
Photo taken on November 22, 2023, during waste audit.

Photo 4: Newsprint/paper waste bin sorted from HRM collection Area 1.
Photo taken on November 22, 2023, during waste audit.

Photo 5: Waste load collected from HRM collection Area 2.
Photo taken on November 7, 2023.

Photo 6: Waste audit sample collected from HRM collection Area 2.
Photo taken on November 22, 2023, during waste audit.

Photo 7: Sorting process and white goods waste bin of HRM collection Area 2.
Photo taken on November 22, 2023, during waste audit.

Photo 8: Good waste bin sorted from HRM collection Area 2.
Photo taken on November 22, 2023, during waste audit.

Photo 9: Waste collection vehicle unloading waste collected from HRM Area 3.
Photo collected November 6, 2023.

Photo 10: Waste audit sample from HRM collection Area 3.
Photo taken on November 22, 2023, during waste audit.

Photo 11: HHW waste bin sorted from HRM collection Area 3.
Photo taken on November 22, 2023, during waste audit.

Photo 12: Food waste bin sorted from HRM collection Area 3.
Photo taken on November 22, 2023, during waste audit.

Photo 13: Waste pile from HRM collection Area 4.
Photo taken on November 8, 2023.

Photo 14: Waste audit sample from HRM collection Area 4.
Photo taken on November 22, 2023, during waste audit.

Photo 15: Paper waste sorted from HRM collection Area 4.
Photo taken on November 22, 2023, during waste audit.

Photo 16: OCC waste sorted from HRM collection Area 4.
Photo taken on November 22, 2023, during waste audit.

Photo 17: Waste collection vehicle unloading waste collected from HRM Area 5. Photo taken on November 15, 2023.

Photo 18: Waste audit sample from HRM collection Area 5A (extra load). Photo taken on November 22, 2023, during waste audit.

Photo 19: Yard waste bin sorted from HRM collection Area 5A (extra load). Photo taken on November 22, 2023, during waste audit.

Photo 20: Food waste bin sorted from HRM collection Area 5A (extra load). Photo taken on November 22, 2023, during waste audit.

Photo 21: Waste pile from HRM collection Area 5.
Photo taken on November 16, 2023.

Photo 22: Waste audit sample from HRM collection Area 5B (extra load).
Photo taken on November 22, 2023, during waste audit.

Photo 23: White goods waste sample from HRM collection Area 5B (extra load).
Photo taken on November 22, 2023, during waste audit.
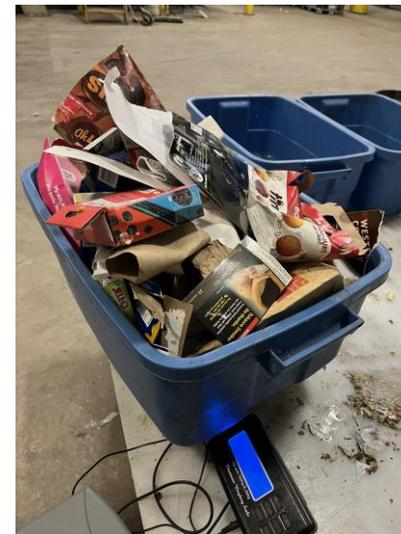
Photo 24: OCC waste sample from HRM collection Area 5B (extra load).
Photo taken on November 22, 2023, during waste audit.

Photo 25: Waste collection vehicle unloading waste collected from HRM Area 6.
Photo taken on November 13, 2023.

Photo 26: Waste audit sample collected from HRM collection Area 6.
Photo taken on November 22, 2023, during waste audit.

Photo 27: Food waste bin separated from HRM collection Area 6.
Photo taken on November 22, 2023, during waste audit.

Photo 28: Paper waste bin separated from HRM collection Area 6.
Photo taken on November 22, 2023, during waste audit.

Photo 29: Waste pile from HRM collection Area 7.
Photo taken on November 9, 2023.

Photo 30: Waste from HRM collection Area 7.
Photo taken on November 22, 2023, during waste audit.

Photo 31: Food waste bin separated from HRM collection Area 7.
Photo taken on November 22, 2023, during waste audit.

Photo 32: White goods waste bin sample from HRM collection Area 7.
Photo taken on November 22, 2023, during waste audit.

Photo 33: Waste audit sample from HRM collection Area 8.
Photo taken on November 22, 2023, during waste audit.

Photo 34: Paper waste sample from HRM collection Area 8 following sorting.
Photo taken on November 22, 2023, during waste audit.

Photo 35: Food waste bin separated from HRM collection Area 8.
Photo taken on November 22, 2023, during waste audit.

Photo 36: OCC waste sample from HRM collection Area 8 following sorting.
Photo taken on November 22, 2023, during waste audit.

Photo 37: Waste load collected from HRM collection Area 9 (Condos). Photo taken on November 10, 2023.

Photo 38: Waste audit sample from HRM collection Area 9 (Condos). Photo taken on November 22, 2023, during waste audit.

Photo 39: Food waste sample from HRM collection Area 9 (Condos) following sorting. Photo taken on November 22, 2023, during waste audit.

Photo 40: OCC waste sample from HRM collection Area 9 (Condos) following sorting. Photo taken on November 22, 2023, during waste audit.

Attachment 2
Scale Tickets

Halifax Regional Municipality

Scale Slip:	090278
	11/17/2023 12:40:15
Clerk:	Shelley

Gross Weight:	24,710 (kg)
Tare Weight:	16,460 (kg)
Net Weight:	8,250 (kg)

Total:	$0.00
	$0.00

Vehicle ID:	RE1034
License Plate:	56-949-D
Waste Type:	residential
Origin:	1 HALIFAX
Invoice:	0400927
	Royal Environmental Group

Halifax Regional Municipality

		Scale Slip:	090228
			11/16/2023 10:20:14
		Clerk:	Shelley

Vehicle ID:	RE1029	Gross Weight:	25,970 (kg)
License Plate:	55-318-D	Tare Weight:	16,580 (kg)
Waste Type:	residential	Net Weight:	9,390 (kg)
Origin:	5 SACKVILLE/FALL RIVER		
Invoice:	0400927		$0.00
	Royal Environmental Group	Total:	$0.00

Halifax Regional Municipality

Scale Slip:	090199
	11/15/2023 12:42:11
Clerk:	Shelley

Gross Weight:	23,840 (kg)
Tare Weight:	16,050 (kg)
Net Weight:	7,790 (kg)

Vehicle ID:	RE2088
License Plate:	PR47473
Waste Type:	residential
Origin:	5 SACKVILLE/FALL RIVER
Invoice:	0400927
	Royal Environmental Group

Total:	$0.00
	$0.00

Halifax Regional Municipality

Scale Slip:	090130
	11/13/2023 12:45:26
Clerk:	Shelley

Gross Weight:	22,950 (kg)
Tare Weight:	16,060 (kg)
Net Weight:	6,890 (kg)

Vehicle ID:	RE2105
License Plate:	44-096-D
Waste Type:	residential
Origin:	6 COLE HARBOUR/EASTERN PASSAGE
Invoice:	0400927
	Royal Environmental Group

Total:	$0.00
	$0.00

Halifax Regional Municipality

Scale Slip:	090112
	11/10/2023 16:12:23
Clerk:	DMS

Gross Weight:	19,260 (kg)
Tare Weight:	16,120 (kg)
Net Weight:	3,140 (kg)

Total:	$0.00
	$0.00

Vehicle ID:	GFL050
License Plate:	41212D
Waste Type:	residential
Origin:	HALIFAX CONDOS
Invoice:	0402150
	GFL Environmental Inc

Halifax Regional Municipality

Scale Slip: 090069
                11/09/2023 14:08:49

Clerk: DMS

Gross Weight: 26,290 (kg)
Tare Weight: 17,140 (kg)
Net Weight: 9,150 (kg)

Vehicle ID: MW9519
License Plate: 56245D
Waste Type: residential
Origin: 7 PRESTON/LAWRENCETOWN/LK ECHO
Invoice: 0188466
                MILLER WASTE SYSTEMS

Total: $0.00
                $0.00

Halifax Regional Municipality

Scale Slip:	090040
	11/08/2023 15:09:28
Clerk:	Shelley

Gross Weight:	29,620 (kg)
Tare Weight:	16,960 (kg)
Net Weight:	12,660 (kg)

Total:	$0.00
	$0.00

Vehicle ID:	GFL007
License Plate:	45362D
Waste Type:	residential
Origin:	4 WESTERN COUNTY
Invoice:	0402150
	GFL Environmental Inc

Halifax Regional Municipality

Scale Slip: 089995
                   11/07/2023 12:13:25
Clerk: Shelley

Gross Weight: 18,800 (kg)
Tare Weight: 15,740 (kg)
Net Weight: 3,060 (kg)

Total: $0.00
                               $0.00

Vehicle ID: ES4038
License Plate: 48770D
Waste Type: residential
Origin: 8 EASTERN COUNTY
Invoice: 0028092
                   EASTERN SHORE CARTAGE

Halifax Regional Municipality

Scale Slip:	089972
	11/06/2023 14:12:54
Clerk:	Shelley

Gross Weight:	24,540 (kg)
Tare Weight:	16,200 (kg)
Net Weight:	8,340 (kg)

Vehicle ID:	RE2088
License Plate:	PR47473
Waste Type:	residential
Origin:	3 BEDFORD/HAMMONDS PLAINS
Invoice:	0400927
	Royal Environmental Group

Total:	$0.00
	$0.00

Halifax Regional Municipality

Scale Slip:	089992
	11/07/2023 11:49:22
Clerk:	Shelley

Gross Weight:	24,260 (kg)
Tare Weight:	15,910 (kg)
Net Weight:	8,350 (kg)

Vehicle ID:	RE2083
License Plate:	44-075-D
Waste Type:	residential
Origin:	2 DARTMOUTH
Invoice:	0400927
	Royal Environmental Group

Total:	$0.00
	$0.00

ATTACHMENT 3
FIELD DATA SHEETS

Performance Audit Record

Date   November 22, 2023

Name of Supervisor   Callum Drever

Area   Area 1

Number of Sorters   4

Weighscale Ticket Information

Truck Number/ID	RE1034	
Collection Area	Halifax	
Date	17-Nov-23	
Ticket Time	12:40	
Gross Weight	24,710	KG
Tare Weight	18,460	KG
Net Weight	8250	KG

Weight of Gross Sample   125.5   KG

Weight of Tote Bin   50   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   75.5   KG   **Sample Audit Time Started**   8:50 AM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   9:20AM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1	2	
Garbage/Residue	50.00	117.50	-	67.50
Fibre - Newsprint/Paper	2.20	3.50	-	1.30
Fibre - OCC	2.20	4.00	-	1.80
Food/Putrescible Waste	1.10	5.30	-	4.20
Yard Waste	0.00	0.00	-	0.00
HHW	0.00	0.00	-	0.00
White Goods	1.10	1.50	-	0.40

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	117.50	50.00	67.50	89.404
Fibre - Newsprint/Paper	3.50	2.20	1.30	1.722
Fibre - OCC	4.00	2.20	1.80	2.384
Food/Putrescible Waste	5.30	1.10	4.20	5.563
Yard Waste	0.00	0.00	0.00	0.000
HHW	0.00	0.00	0.00	0.000
White Goods	1.50	1.10	0.40	0.530
Lost or Gained Mass	Combined Weight Following Sorting			0.000
	125.50			

Notes:

Performance Audit Record

Date   November 22, 2023

Name of Supervisor   Callum Drever

Area   Area 2

Number of Sorters   5

Weighscale Ticket Information

Truck Number/ID	RE2083	
Collection Area	Dartmouth	
Date	07-Nov-23	
Ticket Time	11:49	
Gross Weight	24,260	KG
Tare Weight	15,910	KG
Net Weight	8350	KG

Weight of Gross Sample   195   KG

Weight of Tote Bin   51   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   144   KG   **Sample Audit Time Started**   9:20AM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   10:00AM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1	2	
Garbage/Residue	51.00	171.00	-	120.00
Fibre - Newsprint/Paper	2.20	3.50	2.90	4.20
Fibre - OCC	2.20	3.90	2.50	4.20
Food/Putrescible Waste	2.20	8.90	5.90	12.60
Yard Waste	0.00	0.00	-	0.00
HHW	0.00	0.00	-	0.00
White Goods	1.10	3.20	-	2.10

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	171.00	51.00	120.00	83.333
Fibre - Newsprint/Paper	6.40	2.20	4.20	2.917
Fibre - OCC	6.40	2.20	4.20	2.917
Food/Putrescible Waste	14.80	2.20	12.60	8.750
Yard Waste	0.00	0.00	0.00	0.000
HHW	0.00	0.00	0.00	0.000
White Goods	3.20	1.10	2.10	1.458
Lost or Gained Mass	Combined Weight Following Sorting			-0.256
	194.50			

Notes:

Performance Audit Record

Date November 22, 2023

Name of Supervisor Callum Drever

Area Area 3

Number of Sorters 4

Weighscale Ticket Information

Truck Number/ID	RE2088
Collection Area	Bedford/Hammonds Plains
Date	06-Nov-23
Ticket Time	14:12
Gross Weight	24,540 KG
Tare Weight	16,200 KG
Net Weight	8340 KG

Weight of Gross Sample 144.5 KG

Weight of Tote Bin 51 KG   **Date of Audit of Sample** 22-Nov-23

Net Sample of Trash 93.5 KG   **Sample Audit Time Started** 10:00 AM

Number of Bulkies Observed -   **Sample Audit Time Completed** 10:50 AM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1 (Black)	2 (Clear)	
Garbage/Residue	51.00	126.00	-	75.00
Fibre - Newsprint/Paper	2.20	3.60	-	1.40
Fibre - OCC	2.20	5.10	-	2.90
Food/Putrescible Waste	2.20	4.60	10.70	13.10
Yard Waste	1.10	1.20	-	0.10
HHW	1.10	1.30	-	0.20
White Goods	1.10	1.20	-	0.10

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	126.00	51.00	75.00	80.214
Fibre - Newsprint/Paper	3.60	2.20	1.40	1.497
Fibre - OCC	5.10	2.20	2.90	3.102
Food/Putrescible Waste	15.30	2.20	13.10	14.011
Yard Waste	1.20	1.10	0.10	0.107
HHW	1.30	1.10	0.20	0.214
White Goods	1.20	1.10	0.10	0.107
Lost or Gained Mass	Combined Weight Following Sorting			
	144.50			0.000

Notes:

Performance Audit Record

Date   November 22, 2023   **Name of Supervisor**   Callum Drever

Area   Area 5A   **Number of Sorters**   5

Weighscale Ticket Information

Truck Number/ID	RE1029
Collection Area	Sackville/Fall River
Date	16-Nov-23
Ticket Time	10:20
Gross Weight	25,970	KG
Tare Weight	16,580	KG
Net Weight	9390	KG

Weight of Gross Sample   161.5   KG

Weight of Tote Bin   50   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   111.5   KG   **Sample Audit Time Started**   11:20 AM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   11:55 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1	2	
Garbage/Residue	50.00	145.00	-	95.00
Fibre - Newsprint/Paper	2.20	1.70	2.10	1.60
Fibre - OCC	2.20	2.70	2.90	3.40
Food/Putrescible Waste	2.20	8.40	3.20	9.40
Yard Waste	1.10	1.20	-	0.10
HHW	1.10	1.50	-	0.40
White Goods	2.20	1.20	1.20	0.20

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	145.00	50.00	95.00	85.202
Fibre - Newsprint/Paper	3.80	2.20	1.60	1.435
Fibre - OCC	5.60	2.20	3.40	3.049
Food/Putrescible Waste	1.50	1.10	9.40	8.430
Yard Waste	2.40	2.20	0.10	0.090
HHW	0.00	0.00	0.40	0.359
White Goods	2.40	2.20	0.20	0.179
Lost or Gained Mass	Combined Weight Following Sorting			-0.310
	161.00			

Notes: Sample Area 5 was divided into two loads for QA/QC (Area 5A and 5B).

Performance Audit Record

Date   November 22, 2023   **Name of Supervisor**   Callum Drever

Area   Area 5A   **Number of Sorters**   5

Weighscale Ticket Information

Truck Number/ID	RE1029
Collection Area	Sackville/Fall River
Date	16-Nov-23
Ticket Time	10:20
Gross Weight	25,970	KG
Tare Weight	16,580	KG
Net Weight	9390	KG

Weight of Gross Sample   161.5   KG

Weight of Tote Bin   50   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   111.5   KG   **Sample Audit Time Started**   11:20 AM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   11:55 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1	2	
Garbage/Residue	50.00	145.00	-	95.00
Fibre - Newsprint/Paper	2.20	1.70	2.10	1.60
Fibre - OCC	2.20	2.70	2.90	3.40
Food/Putrescible Waste	2.20	8.40	3.20	9.40
Yard Waste	1.10	1.20	-	0.10
HHW	1.10	1.50	-	0.40
White Goods	2.20	1.20	1.20	0.20

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	145.00	50.00	95.00	85.202
Fibre - Newsprint/Paper	3.80	2.20	1.60	1.435
Fibre - OCC	5.60	2.20	3.40	3.049
Food/Putrescible Waste	1.50	1.10	9.40	8.430
Yard Waste	2.40	2.20	0.10	0.090
HHW	0.00	0.00	0.40	0.359
White Goods	2.40	2.20	0.20	0.179
Lost or Gained Mass	Combined Weight Following Sorting			-0.310
	161.00			

Notes: Sample Area 5 was divided into two loads for QA/QC (Area 5A and 5B).

Performance Audit Record

Date	November 22, 2023	Name of Supervisor	Callum Drever
Area	Area 5B	Number of Sorters	4

Weighscale Ticket Information

Truck Number/ID	RE2088
Collection Area	Sackville/Fall River
Date	15-Nov-23
Ticket Time	12:42
Gross Weight	23,840 KG
Tare Weight	16,050 KG
Net Weight	7790 KG

Weight of Gross Sample	150.5	KG	
Weight of Tote Bin	49.5	KG	Date of Audit of Sample — 22-Nov-23
Net Sample of Trash	101	KG	Sample Audit Time Started — 12:40PM
Number of Bulkies Observed	-		Sample Audit Time Completed — 1:05 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG) 1	Total Separated Sample Weights (KG) 2	Net Sample (KG)
Garbage/Residue	49.50	138.50	-	89.00
Fibre - Newsprint/Paper	1.10	1.90	-	0.80
Fibre - OCC	2.20	4.50	2.50	4.80
Food/Putrescible Waste	1.10	4.30	-	3.20
Yard Waste	0.00	0.00	-	0.00
HHW	1.10	1.30	-	0.20
White Goods	1.10	3.80	-	2.70

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	138.50	49.50	89.00	88.119
Fibre - Newsprint/Paper	1.90	1.10	0.80	0.792
Fibre - OCC	7.00	2.20	4.80	4.752
Food/Putrescible Waste	4.30	1.10	3.20	3.168
Yard Waste	0.00	0.00	0.00	0.000
HHW	1.30	1.10	0.20	0.198
White Goods	3.80	1.10	2.70	2.673
Lost or Gained Mass	Combined Weight Following Sorting	Combined Weight Following Sorting	Combined Weight Following Sorting	
Lost or Gained Mass	150.50	150.50	150.50	0.000

Notes: Sample Area 5 was divided into two loads for QA/QC (Area 5A and 5B).

Performance Audit Record

Date November 22, 2023

Name of Supervisor Callum Drever

Area Area 6

Number of Sorters 4

Weighscale Ticket Information

Truck Number/ID	RE2105
Collection Area	Cole Harbour/ Eastern Passage
Date	13-Nov-23
Ticket Time	12:45
Gross Weight	22,950 KG
Tare Weight	16,060 KG
Net Weight	6890 KG

Weight of Gross Sample 123.5 KG

Weight of Tote Bin 49.5 KG **Date of Audit of Sample** 22-Nov-23

Net Sample of Trash 74 KG **Sample Audit Time Started** 1:05 PM

Number of Bulkies Observed - **Sample Audit Time Completed** 1:40 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG) 1	Total Separated Sample Weights (KG) 2	Net Sample (KG)
Garbage/Residue	49.50	111.00	-	61.50
Fibre - Newsprint/Paper	2.20	2.40	1.90	2.10
Fibre - OCC	2.20	1.80	2.30	1.90
Food/Putrescible Waste	2.20	5.60	4.70	8.10
Yard Waste	1.10	1.20	-	0.10
HHW	0.00	0.00	-	0.00
White Goods	1.10	1.40	-	0.30

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	111.00	49.50	61.50	83.108
Fibre - Newsprint/Paper	4.30	2.20	2.10	2.838
Fibre - OCC	4.10	2.20	1.90	2.568
Food/Putrescible Waste	10.30	2.20	8.10	10.946
Yard Waste	1.20	1.10	0.10	0.135
HHW	0.00	0.00	0.00	0.000
White Goods	1.40	1.10	0.30	0.405
Lost or Gained Mass	Combined Weight Following Sorting			0.000
	123.50			

Notes:

Performance Audit Record

Date   November 22, 2023   **Name of Supervisor**   Callum Drever

Area   Area 7   **Number of Sorters**   4

Weighscale Ticket Information

Truck Number/ID	MW9519
Collection Area	Preston/ Lawrencetown/Lake Echo
Date	09-Nov-23
Ticket Time	14:08
Gross Weight	26,290 KG
Tare Weight	17,140 KG
Net Weight	9150 KG

Weight of Gross Sample   161.5   KG

Weight of Tote Bin   49.5   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   112   KG   **Sample Audit Time Started**   1:40 PM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   2:25 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1	2	
Garbage/Residue	49.50	152.50	-	103.00
Fibre - Newsprint/Paper	1.10	3.80	-	2.70
Fibre - OCC	2.20	2.40	1.20	1.40
Food/Putrescible Waste	2.20	3.80	2.40	4.00
Yard Waste	0.00	0.00	-	0.00
HHW	0.00	0.00	-	0.00
White Goods	2.20	1.20	1.60	0.60

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	152.50	49.50	103.00	91.964
Fibre - Newsprint/Paper	3.80	1.10	2.70	2.411
Fibre - OCC	3.60	2.20	1.40	1.250
Food/Putrescible Waste	6.20	2.20	4.00	3.571
Yard Waste	0.00	0.00	0.00	0.000
HHW	0.00	0.00	0.00	0.000
White Goods	2.80	2.20	0.60	0.536
Lost or Gained Mass	Combined Weight Following Sorting			-0.310
	161.00			

Notes:

Performance Audit Record

Date   November 22, 2023   **Name of Supervisor**   Callum Drever

Area   Area 8   **Number of Sorters**   4

Weighscale Ticket Information

Truck Number/ID	ES4038
Collection Area	Eastern County
Date	07-Nov-23
Ticket Time	12:13
Gross Weight	18,800 KG
Tare Weight	15,740 KG
Net Weight	3060 KG

Weight of Gross Sample   149   KG

Weight of Tote Bin   50   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   99   KG   **Sample Audit Time Started**   2:45 PM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   3:20 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)				Net Sample (KG)
		1 (Black)	2 (Clear)	3 (Clear)	4 (Clear)	
Garbage/Residue	50.00	77.50	102.50	-	-	80.00
Fibre - Newsprint/Paper	1.10	0.00	1.70	-	-	0.60
Fibre - OCC	2.20	3.10	1.70	-	-	2.60
Food/Putrescible Waste	4.40	1.80	10.00	2.20	5	14.60
Yard Waste	0.00	0.00	-	-	-	0.00
HHW	0.00	0.00	-	-	-	0.00
White Goods	0.00	0.00	-	-	-	0.00

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	180.00	50.00	80.00	80.808
Fibre - Newsprint/Paper	1.70	1.10	0.60	0.606
Fibre - OCC	4.80	2.20	2.60	2.626
Food/Putrescible Waste	11.80	4.40	14.60	14.747
Yard Waste	0.00	0.00	0.00	0.000
HHW	0.00	0.00	0.00	0.000
White Goods	0.00	0.00	0.00	0.000
Lost or Gained Mass	Combined Weight Following Sorting			-0.336
	148.50			

Notes: Area 8 was sorted by black and clear bags. The black waste was initially sorted out
and then all placed in the tote, to get the weight of all the black bag materials (30.5 kg). This with the tote
found the starting weight bin for the clear waste to be 80.5 kg. Clear waste was then sorted and weighed as
usual.

Performance Audit Record

Date   November 22, 2023   **Name of Supervisor**   Callum Drever

Area   Area 9 (Condos)   **Number of Sorters**   4

Weighscale Ticket Information

Truck Number/ID	GFL050
Collection Area	Halifax Condos
Date	10-Nov-23
Ticket Time	16:12
Gross Weight	19,260 KG
Tare Weight	16,120 KG
Net Weight	3140 KG

Weight of Gross Sample   129.5   KG

Weight of Tote Bin   50.5   KG   **Date of Audit of Sample**   22-Nov-23

Net Sample of Trash   79   KG   **Sample Audit Time Started**   3:20 PM

Number of Bulkies Observed   -   **Sample Audit Time Completed**   4:00 PM

Material	Empty Bin(s) Weight (KG)	Total Separated Sample Weights (KG)		Net Sample (KG)
		1	2	
Garbage/Residue	50.50	113.50	-	63.00
Fibre - Newsprint/Paper	2.20	1.90	3.10	2.80
Fibre - OCC	2.20	2.30	3.20	3.30
Food/Putrescible Waste	2.20	6.00	5.50	9.30
Yard Waste	0.00	0.00	-	0.00
HHW	1.10	1.20	-	0.10
White Goods	0.00	0.00	-	0.00

Material	Gross Sample (KG)	Total Weight of Bins (KG)	Net Sample (KG)	Net Waste Percentage (%)
Garbage/Residue	113.50	50.50	63.00	79.747
Fibre - Newsprint/Paper	5.00	2.20	2.80	3.544
Fibre - OCC	5.50	2.20	3.30	4.177
Food/Putrescible Waste	11.50	2.20	9.30	11.772
Yard Waste	0.00	0.00	0.00	0.000
HHW	1.20	1.10	0.10	0.127
White Goods	0.00	0.00	0.00	0.000
Lost or Gained Mass	Combined Weight Following Sorting			0.000
	129.50			

Notes:

ATTACHMENT 4
SUPPORTING DATA

Waste Collection Area	% Organics From November 22, 2023 Waste Audit	Average Based On Previous Three Fiscal Years (Tonnes)	Estimated Annual Compostable Waste (Tonnes)
1	9.67%	10130.91	979.66
2	14.58%	6958.87	1014.60
3	18.72%	4479.73	838.61
4	10.79%	5415.09	584.29
5	10.86%	8615.57	935.65
6	16.49%	5242.25	864.45
7	7.23%	2989.28	216.12
8	17.98%	3408.18	612.79
Condos	19.49%	2493.20	485.92
TOTAL		49733.08	6532.09

Mean	13.98%	-	725.79
Min	7.23%	-	216.12
Max	19.49%	-	1014.60

Compostable Waste Percentage	(6532.09/49733.08)*100% = 13.13%

Notes: % Organic for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

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Waste Collection Area	% Organics From May 17, 2023 Waste Audit	% Organics From September 7, 2023 Waste Audit	% Organics From November 22, 2023 Waste Audit	% Organics Average	Average Based On Previous Three Fiscal Years (Tonnes)	Estimated Annual Compostable Waste (Tonnes)
1	11.23%	4.11%	9.67%	8.34%	10130.91	844.92
2	10.10%	4.27%	14.58%	9.65%	6958.87	671.53
3	15.89%	5.08%	18.72%	13.23%	4479.73	592.67
4	26.53%	9.63%	10.79%	15.65%	5415.09	847.46
5	6.28%	4.33%	10.86%	7.16%	8615.57	616.87
6	6.75%	4.40%	16.49%	9.21%	5242.25	482.81
7	5.00%	6.26%	7.23%	6.16%	2989.28	184.14
8	5.37%	12.47%	17.98%	11.94%	3408.18	406.94
Condos	39.25%	18.52%	19.49%	25.75%	2493.20	642.00
				TOTAL	49733.08	5289.34

Mean	11.90%	-	587.70
Min	6.16%	-	184.14
Max	25.75%	-	847.46

Compostable Waste Percentage	(5289.34/49733.08)*100% = 10.64%

Notes:

1. % Organic for Area 1 based on average of the two samples (1-3 and 1) collected during the May 2023 waste audit.

2. % Organic for Area 2 is based on average of the two samples (2A and 2B) collected during the August 2023 waste audit.

3. % Organic for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

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C O N S U L T I N G

Audit	Waste Collection Area	% Organics	Average Waste Based On Previous Three Fiscal Years (Tonnes)	Estimated Annual Compostable Waste (Tonnes)
May 2023 Performance Audit	1	11.23%	10130.91	1137.70
	2	10.10%	6958.87	702.85
	3	15.89%	4479.73	711.83
	4	26.53%	5415.09	1436.62
	5	6.28%	8615.57	541.06
	6	6.75%	5242.25	353.85
	7	5.00%	2989.28	149.46
	8	5.37%	3408.18	183.02
	Condos	39.25%	2493.20	978.58
August 2023 Performance Audit	1	4.11%	10130.91	416.38
	2	4.27%	6958.87	297.14
	3	5.08%	4479.73	227.57
	4	9.63%	5415.09	521.47
	5	4.33%	8615.57	373.05
	6	4.40%	5242.25	230.66
	7	6.26%	2989.28	187.13
	8	12.47%	3408.18	425.00
	Condos	18.52%	2493.20	461.74
November 2023 Performance Audit	1	9.67%	10130.91	979.66
	2	14.58%	6958.87	1014.60
	3	18.72%	4479.73	838.61
	4	10.79%	5415.09	584.29
	5	10.86%	8615.57	935.65
	6	16.49%	5242.25	864.45
	7	7.23%	2989.28	216.12
	8	17.98%	3408.18	612.79
	Condos	19.49%	2493.20	485.92
	Mean	11.90%	-	587.67
	Min	4.11%	-	149.46
	Max	39.25%	-	1436.62

Notes:
1. % Organic for Area 1 based on average of the two samples (1-3 and 1) collected during the May 2023 waste audit.
2. % Organic for Area 2 is based on average of the two samples (2A and 2B) collected during the August 2023 waste audit.
3. % Organic for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

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Table 4: Compostable Waste Descriptive Statistics   **Project 22-8641**

Mean	587.6747443
Standard Error	65.23091252
Median	521.473167
Mode	#N/A
Standard Deviation	338.9497641
Sample Variance	114886.9426
Kurtosis	-0.179211768
Skewness	0.683212061
Range	1287.159377
Minimum	149.464
Maximum	1436.623377
Sum	15867.2181
Count	27
Confidence Level(95.0%)	134.084061
Upper Confidence Interval	721.7588053
Lower Confidence Interval	453.5906833

Waste Collection Area	% Food Waste From November 22, 2023 Waste Audit	Average Based On Previous Three Fiscal Years (Tonnes)	Estimated Annual Food Waste (Tonnes)
1	5.56%	10130.91	563.28
2	8.75%	6958.87	608.90
3	14.01%	4479.73	627.61
4	7.33%	5415.09	396.93
5	5.80%	8615.57	499.70
6	10.95%	5242.25	574.03
7	3.57%	2989.28	106.72
8	14.75%	3408.18	502.71
Condos	11.77%	2493.20	293.45
TOTAL		49733.08	4173.32

Mean	9.17%	-	463.70
Min	3.57%	-	106.72
Max	14.75%	-	627.61

Food Waste Percentage	(4173.32/49733.08)*100% = 8.39%

Notes: % Food waste for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

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Waste Collection Area	% Food Waste From May 17, 2023 Waste Audit	% Food Waste From September 7, 2023 Waste Audit	% Food Waste From November 22, 2023 Waste Audit	% Food Waste Average	Average Based On Previous Three Fiscal Years (Tonnes)	Estimated Annual Food Waste (Tonnes)
1	4.56%	2.42%	5.56%	4.18%	10130.91	423.47
2	3.72%	2.96%	8.75%	5.14%	6958.87	357.69
3	10.56%	4.11%	14.01%	9.56%	4479.73	428.26
4	12.42%	7.76%	7.33%	9.17%	5415.09	496.56
5	1.97%	3.90%	5.80%	3.89%	8615.57	335.15
6	5.04%	2.83%	10.95%	6.27%	5242.25	328.69
7	2.41%	2.05%	3.57%	2.68%	2989.28	80.11
8	1.79%	9.12%	14.75%	8.55%	3408.18	291.40
Condos	32.20%	11.11%	11.77%	18.36%	2493.20	457.75
				TOTAL	49733.08	3199.08

Mean	7.53%	-	355.45
Min	2.68%	-	80.11
Max	18.36%	-	496.56

Compostable Waste Pe	(3199.08/49733.08)*100% = 6.43%

Notes:

1. % Food waste for Area 1 based on average of the two samples (1-3 and 1) collected during the May 2023 waste audit.

2. % Food waste for Area 2 is based on average of the two samples (2A and 2B) collected during the August 2023 waste audit.
3. % Food waste for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

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Audit	Waste Collection Area	% Food Waste	Average Waste Based On Previous Three Fiscal Years (Tonnes)	Estimated Annual Compostable Waste (Tonnes)
May 2023 Performance Audit	1	4.56%	10130.91	461.97
	2	3.72%	6958.87	258.87
	3	10.56%	4479.73	473.06
	4	12.42%	5415.09	672.55
	5	1.97%	8615.57	169.73
	6	5.04%	5242.25	264.21
	7	2.41%	2989.28	72.04
	8	1.79%	3408.18	61.01
	Condos	32.20%	2493.20	802.81
August 2023 Performance Audit	1	2.42%	10130.91	245.17
	2	1.99%	6958.87	138.48
	3	4.11%	4479.73	184.12
	4	7.76%	5415.09	420.21
	5	3.90%	8615.57	336.01
	6	2.83%	5242.25	148.36
	7	2.05%	2989.28	61.28
	8	9.12%	3408.18	310.83
	Condos	11.11%	2493.20	276.99
November 2023 Performance Audit	1	5.56%	10130.91	563.28
	2	8.75%	6958.87	608.90
	3	14.01%	4479.73	627.61
	4	7.33%	5415.09	396.93
	5	5.80%	8615.57	499.70
	6	10.95%	5242.25	574.03
	7	3.57%	2989.28	106.72
	8	14.75%	3408.18	502.71
	Condos	11.77%	2493.20	293.45
	Mean	7.50%	-	353.00
	Min	1.79%	-	61.01
	Max	32.20%	-	802.81

Notes:
1. % Food waste for Area 1 based on average of the two samples (1-3 and 1) collected during the May 2023 waste audit.
2. % Food waste for Area 2 is based on average of the two samples (2A and 2B) collected during the August 2023 waste audit.
3. % Food waste for Area 5 is based on average of the two samples (5A and 5B) collected during the November 2023 waste audit.

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Mean	353.0002867
Standard Error	39.85020727
Median	310.826016
Mode	#N/A
Standard Deviation	207.067751
Sample Variance	42877.05351
Kurtosis	-0.807788102
Skewness	0.33384947
Range	741.803978
Minimum	61.006422
Maximum	802.8104
Sum	9531.00774
Count	27
Confidence Level(95.0%)	81.91327417
Upper Confidence Interval	434.9135608
Lower Confidence Interval	271.0870125

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