www.compost.org

SUMMARY OF ANALYSIS REPORT

To: Essex-Windsor SWA
360 Fairview Ave West
Essex, Ontario N8M 3G4

CQA Member#: 07-1200

Attention:

Sample I.D.: ROW "T2-K-23"

Report#: C24297-11255
C24297-70000

Sample Date: 2024-10-21
Reported Date: 2024-10-31

Compost Manufactured in: Ontario
Feedstock: *Leaf & Yard Residues*

CQA COMPOST QUALITY & VALUE TESTING PARAMETERS REPORT

SAMPLE ID	RECOMMENDED END USE/MARKET
ROW "T2-K-23"	CATEGORY AA
Regulatory	See Appendix I
Product Quality	See Appendix II
Product Value/ Soil Suitability*	See Appendix III (Soil, Enviro, Manure Compost)

The Compost Quality Alliance (CQA) is a voluntary quality monitoring program established by the Compost Council of Canada and the compost producers utilizing recognized standardized testing methodologies and uniform operating protocols to provide customer assurance in compost selection its use, and proper end-use utilization.

All analysis of this compost product was conducted and provided by A&L Canada Laboratories Inc. for the Compost Quality Alliance (CQA).

Haifeng Song, Senior Chemist

Ian McLachlin, Vice-President

A&L Canada Laboratories Inc.
London, Ontario Canada
(519) 457-2575

A proud member of

Fièrement membre du Conseil canadien du COMPOST Council of Canada
Proud to be a member

***PLEASE NOTE: Major Nutrients under the Fertilizer Act and Regulations (CFIA)**

Please see Appendix III for nutrient content (of impact to claims and labelling if used in declarations).

Compost is classified in Schedule II as a supplement, and as such nutrient guarantees are not mandatory. However, if any claims are made regarding nutritional value of the product, such as for composted manure, the product would then be classified as a supplement and a fertilizer, and the label would have to include the guarantees for the major nutrients. The guarantees for the major nutrients include the minimum amounts of Total Nitrogen (N), Available Phosphoric Acid (P_2O_5) and Soluble Potash K_2O. Source: T-4-120 - Regulation of Compost under the Fertilizers Act and Regulations. http://www.inspection.gc.ca/plants/fertilizers/trade-memoranda/t-4-120/eng/1307910204607/1307910352783

Appendix I
Ontario Compost Guidelines 2012 & CFIA Fertilizer Act & Regulations

A. Maximum Concentrations for Trace Metals in Compost - Ontario†

Trace Elements	Test Results (ug/g)	Category AA	Category A	Category B
		Maximum Concentration within Product (mg/kg dry weight)		
Arsenic (As)	3.74	13	13	75
Cadmium (Cd)	BDL	3	3	20
Chromium (Cr)	7.81	210	210	1060
Cobalt (Co)	1.34	34	34	150
Copper (Cu)	23.68	100	400	760
Lead (Pb)	8.98	150	150	500
Mercury (Hg)	BDL	0.8	0.8	5
Molybdenum (Mo)	2.70	5	5	20
Nickel (Ni)	3.60	62	62	180
Selenium (Se)	BDL	2	2	14
Zinc (Zn)	45.72	500	700	1850

B. Foreign Matter in Compost - Ontario†

	Test Results	Category AA	Category A	Category B
Foreign Matter		Contains < 1% FM greater than 3mm and 0.5% plastics. Shall not contain any FM greater than 25mm/500mL		Contains < 2% FM greater than 3mm and 0.5% plastic. No FM > 25mm/500mL
Percent (%) FM > 3mm/500mL	BDL			
Percent (%) Plastics > 3mm/500mL	BDL			
Pieces 25mm/500mL	0.00			
Sharp Foreign Matter		No sharp matter that can cause human or animal injury		No more than 3 pieces of sharp matter no greater than 12.5mm/500mL
Pieces > 3mm/500mL	0.00			
Pieces > 12.5mm/500mL	0.00			

C. Maturity/Stability - Ontario†

Method	Test Results	Required Limits
CO2 Respiration Rate (mg CO2/g O.M./day)	1.90	≤ 4 mg of carbon in the form of carbon dioxide per gram of organic matter per day
O2 Uptake Respiration Rate (mg O2/kg O.M./hr)		≤ 400 mg oxygen/kg of volatile solids (or organic matter)/hour

D. Pathogens - Ontario†

Pathogen	Test Results	Required Limits
E. coli (MPN/g dry)	<3	<1000 MPN/g total solids calculated on a dry weight basis
Salmonella (P-A/25g(ml))	NEGATIVE	<3 MPN/4g total solids calculated on a dry weight basis

†The following references are from the Ontario Compost Quality Standards Guidelines July 2012

*BDL = Below Detectable Limits

E. CFIA - Ontario

Parameter	Test Results
Total Organic Matter (%)	49.96%
Moisture (%)	28.11%

All analysis conducted and prepared by:
A L Canada Laboratories
2136 Jetstream Rd London, Ontario N5V 3P5 (519) 457-2575

Appendix II

Finished Compost Quality

Parameter	Test Results
pH	8.7
Carbon to Nitrogen Ratio	12:1
Particle Size/Texture (inch)+	1/4
Soluble Salts (ms/cm)	2.4
Sodium Base Saturation (%Na)	1.25%
Major Nutrients	
Available Potassium (%K)	21.74%
Available Magnesium (%Mg)	18.9%
Available Calcium (%Ca)	58.12%

+ Majority of sample passes through this sieve size

Category AA and A - Compost that can be used in any application, such as agricultural lands, residential gardens, horticultural operations, the nursery industry, and other businesses.

Category B - Compost that has a restricted use because of the presence of sharp foreign matter or higher trace element content. Category B compost may require additional control when deemed necessary by a province or territory.

The Compost Directions-for-Use must reflect application rates that adhere to the CFIA long-term element loading limits. Please use the CFIA compost loading rate calculator with trace elements details procided in this report to calculate and meet appropriate application rates: Labelling as appropriate. If you have questions, please contact Susan at santhler@compost.org or 416 670 0510

Reference Compost Quality Parameters for CQA

Use	pH	C:N	Moisture	Particle Size	Soluble Salts	%Na
Remediation	5.8-8.5	10-40	NA	<2 in	<20	<3%
Soil Amendment	5.8-8.5	10-30	NA	<1/2 in	<6	<2%
Landscaping	5.8-8.5	12-22	<50%	<1/2 in	<5	<2%
Planting Media	5.5-7.8	12-22	<50%	<1/2 in	<4	<2%
Turf Establishment & Topdressing	5.5-7.8	12-22	<50%	<3/8 in	<3	<1%
Greenhouse Seeding	6-7	12-22	<25%	<1/4 in	<2	<0.5%
Greenhouse Establishement	6-7	12-22	<30%	<1/2 in	2-3.5	<0.5%
Field Nursery	5.8-8	10-30	<50%	<1/2 in	<3.5	<1%
Agricultural Soil Amendments	6-8	10-30	<50%	<1/2 in	<20	n/a
Potting Soil	5.5-7.2	12-22	<50%	<1/4 in	<2	<1%

The Compost Quality Assurance program goes beyond the provincial requirements to establish full value and appropriate end-use. The Compost Report and Compost End-use table in Appendix II, has 10 different compost application uses from soil remediation, through to potting soil blends. Of note are available soluble salt limits and the percent available sodium for sensitive plants. Appendix III, lists the primary agricultural use parameters and quantitative nutrient content that reflects this compost samples agricultural end-use, and application value. This value includes macro and micro nutrients, soil building properties such as the addition of organic matter, increasing moisture holding capacity, and the soils slow release nutrients. These parameters improve beneficial

Note: For a compost to meet the unrestricted use category, it must meet the unrestricted (Category A) requirements for all trace elements and sharp foreign matter. If the compost fails one criterion of the guideline for unrestricted use but meets the criteria for restricted (Category B) use, then is is classified as a Category B product. Products that do not meet the criteria for either Category A or B must be used or disposed of appropriately.

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Appendix III

Compost Agricultural Product Value

as is basis

Agricultural End-Use	Analysis Result	Unit	Quantity in lbs/T
Physical Parameters			
Dry Matter	71.89%	%	
pH	8.7		
Bulk Density	511	kg/m3	
C:N Ratio	12:1		
Fertilizer Equivalent Minerals			
Nitrogen Total	1.63%	%	32.6
Ammonium Nitrogen	40.23	ppm	0.08
Total Phosphate (P as P2O5)	0.27%	%	5.4
Total Potash (K as K2O)	0.73%	%	14.6
Calcium	3.26%	%	65.2
Magnesium	0.53%	%	10.6
Sulfur	839.03	ppm	1.7
Agricultural Index			
Ag Index	21.32	Can be used on all soils	

Salt injury probable	Limit use to soils with excellent drainage and low salt content				Can be used on soils with poor drainage or high salt content				Can be used on all soils
1	2	3	4	5	6	7	8	9	>10

Figure 1. Adapted from TMECC 05.02-F1 AgIndex interpretation and use guidelines for common edaphic conditions.
Where 10 is a compost material with low potential for salt injury and 1 materials require dilution to prevent salt injury

The results of our testing on this sample indicates that this product is a fine textured, compost (82%+ 1/4 in.), with rich mineral properties, which would meet criteria for agricultural soil amendment, blending and topdressing end-uses purposes. The C:N ratio 12:1 from Appendix II, on the soil suitability report indicates a low C:N ratio and indicating good nitrogen availability. The low C:N ratio in conjunction with the higher total nitrogen content listed in Appendix III indicates early high available nitrogen levels, and should be considered for crop planning.

The proportion of available sodium (1.25% Na), which if used in too heavy a proportion could cause some problems with sensitive species. The sodium levels of this compost sample though high, is suitable for agricultural broadcast field applications and are made to improve the organic matter level and major nutrients phosphorus, potassium and magnesium levels. The compost is also rich in available calcium, sulfur, and zinc, which make it ideal for soil enriching, and amendment. We recommend blending this material at a minimum of 2-3 parts soil blended to each part of this compost to dilute the sodium conentration.

Major Nutrients - Compost is classified in Schedule II (CFIA Fertilizer Act & Regulations) as a supplement, and as such, nutrient guarantees are not mandatory. However, if any claims are made regarding nutritional value of the product, such as for composted manure, the product would then be classified as a supplement and a fertilizer, and label would have to include the guarantees for the major nutrients. The guarantees for the major nutrients include the minimum amounts of Total Nitrogen (N), Available Phosphoric Acid (P2O5) and Soluble Potash (K2O).

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2136 Jetstream Rd London, Ontario N5V 3P5 (519) 457-2575

Report Number: C24297-11255
Account Number: 98043

A & L Canada Laboratories Inc.

2136 Jetstream Road, London, Ontario, N5V 3P5
Telephone: (519) 457-2575 Fax: (519) 457-2664

C24297-11255

To: ESSEX-WINDSOR SWA
360 FAIRVIEW AVE WEST
SUITE 211
ESSEX, ON N8M 3G4

519-776-6370

For: ROW "T2-K-23"

Reported Date:
Printed Date: Oct 31, 2024

COMPOST REPORT

Sample Number	Lab Number	pH	Lime Index	Available Organic Matter %	Phosphorus P ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm
ROW "T2-K-23"	**20044**	**8.7**	**6.9**	**28.4**	**419**	**3844**	**1042**	**5271**

Sulfur S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Sodium Na ppm	Nitrate-N NO3-N ppm	Soluble Salt ms/cm	Nitrogen (Total) (%)	Chloride ppm
76	**16.5**	**37**	**168**	**1.8**	**3.8**	**130**	**27**	**2.4**	**1.63**	**944**

INTERPRETATION

CEC	Percent Base Saturation					Proportional Equivalents (meq)				Cation Ratio		C/N Ratio
meq/100g	% BS	% K	% Mg	% Ca	% Na	K	Mg	Ca	Na	Mg/K	Ca/Mg	
45.3	**100.0**	**21.74**	**18.90**	**58.12**	**1.25**	**9.86**	**8.57**	**26.36**	**0.57**	**1:1**	**3:1**	**12:1**
Optimum Range:		3 - 5	8 - 20	60 - 80		0.5 - 1.3				7:1	5:1	

CQA

* Results reported on a dry weight basis.
The results of this report relate to the sample submitted and analyzed. All results are released based on acceptable QC data.
* Crop yield is influenced by a number of factors in addition to soil fertility.
No guarantee or warranty concerning crop performance is made by A & L.

Results Authorized By: BWood **Beth Wood, Agronomist**

REPORT NUMBER: C24297-11255
ACCOUNT NUMBER: 98043

A & L Canada Laboratories Inc.

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Telephone: (519) 457-2575 Fax: (519) 457-2664

REPORT OF ANALYSIS

TO: ESSEX-WINDSOR SWA
360 FAIRVIEW AVE WEST
SUITE 211
ESSEX, ON N8M 3G4

RE: ROW "T2-K-23"

CQA2400452

DATE RECEIVED: 2024-10-23
DATE REPORTED: 2024-10-31
PAGE: 1 / 1

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
20044	ROW "T2-K-23"	Nitrogen (Total)	1.6	%	TMECC.04.02-D

C24297-11255

Results Authorized By: BWood

REPORT NO.
C24297-70000

ACCOUNT NUMBER
98043

A & L Canada Laboratories Inc.

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TO: ESSEX-WINDSOR SWA
360 FAIRVIEW AVE WEST
SUITE 211
ESSEX, ON N8M 3G4

FOR: ROW T2-K-23

Phone: 800-563-3377
Fax: 519-776-6370

CERTIFICATE OF ANALYSIS

PROJECT NO:

PO#:
LAB NUMBER: 2977001
SAMPLE ID: ROW T2-K-23

SAMPLE MATRIX: COMPOST
DATE SAMPLED: 2024-10-21
DATE RECEIVED: 2024-10-23
DATE REPORTED:
DATE PRINTED: 2024-10-31

PARAMETER	Result	UNIT	DETECTION LIMIT	METHOD REFERENCE
Arsenic	3.74	ug/g	1.00	EPA 3050B/6010B(mod) *
Cadmium	BDL	ug/g	1.00	EPA 3050B/6010B(mod) *
Cobalt	1.34	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*
Chromium	7.81	ug/g	1.00	TMECC.04.06;EPA 3050/6010(mod*
Copper	23.68	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*
Mercury	BDL	ug/g	0.10	EPA 7471 *
Molybdenum	2.7	ug/g	1.0	TMECC.04.06;EPA 3050/6010(mod*
Nickel	3.60	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*
Lead	8.98	ug/g	1.00	EPA 3050B/6010B(mod) *
Selenium	BDL	ug/g	1.00	EPA 3050/6010 (mod) *
Zinc	45.72	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*

* - accredited test
BDL - Below detectable levels

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C24297-70000

Results Authorized By:

Haifeng Song, Ph.D., C.Chem. Lab Director

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PROJECT NO:

PO#:
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SAMPLE ID: ROW T2-K-23

SAMPLE MATRIX: COMPOST
DATE SAMPLED: 2024-10-21
DATE RECEIVED: 2024-10-23
DATE REPORTED:
DATE PRINTED: 2024-10-31

PARAMETER	Result	UNIT	DETECTION LIMIT	METHOD REFERENCE
E. coli	<3	MPN/g dry	3	TMECC 07.01
Salmonella spp.	NEGATIVE	P-A/ 25.0g(ml)	1 CFU	MFLP-75 *
Total sharps > 2.8 mm*	0	pieces/500ml		TMECC 03.08
Total sharps > 12.5 mm	0	pieces/500ml		TMECC 03.08
Total FM > 2.8 mm*	BDL	%	0.01	TMECC 03.08
Total FM > 25 mm	0	pieces/500ml		TMECC 03.08
Total plastics > 2.8 mm*	BDL	%	0.01	TMECC 03.08
Total Organic Matter @ 550 deg C	49.96	%	0.10	LOI@550C
Moisture	28.11	%	0.10	TMECC.03.09-A
Sieve 2 Inch (% Passing)	100.00	%	0.10	ASTMD422
Sieve 1 Inch (% Passing)	100.00	%	0.10	ASTMD422
Sieve 1/2 Inch (% Passing)	97.30	%	0.10	ASTMD422
Sieve 3/8 Inch (% Passing)	91.90	%	0.10	ASTMD422
Sieve 1/4 Inch (% Passing)	82.20	%	0.10	ASTMD422
Compost Stability Index	8	---		TMECC.05.08-B
Respiration-mgCO2-C/g OM/day	1.90	mgCO2-C/ gOM/day	0.01	TMECC.05.08-B
Respiration - mgCO2-C/g TS/day	0.90	mgCO2-C/ gTS/day	0.01	TMECC.05.08-B

Maturity Index: 8 - Inactive, highly matured compost, very well aged, possibly over-aged, like soil; no limitations for usage.
Moisture was raised to 40.09%

* - accredited test
BDL - Below detectable levels

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C24297-70000

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PROJECT NO:

PO#:
LAB NUMBER: 2977001
SAMPLE ID: ROW T2-K-23

SAMPLE MATRIX: COMPOST
DATE SAMPLED: 2024-10-21
DATE RECEIVED: 2024-10-23
DATE REPORTED:
DATE PRINTED: 2024-10-31

PARAMETER	Result Dry Weight	Result As Received	UNIT	DETECTION LIMIT	METHOD REFERENCE
Total Solids (as received)		71.89	%	0.10	Gravimetric
Nitrogen & Carbon					
Total Organic Carbon		27.76	%	0.10	Combustion
Ammonia (NH3/NH4-N)	55.96	40.23	ug/g	.01	Colourimetric
Metals					
Potassium	8421.03	6053.88	ug/g	5.00	TMECC.04.04*
Total Potassium (as K20)	1.01	0.73	%	0.05	ICP
Phosphorus	1629.21	1171.24	ug/g	5.00	TMECC.04.03 *
Total Phosphorus (as P205)	0.37	0.27	%	0.05	ICP
Aluminum	1988.65	1429.64	ug/g	5.00	TMECC.04.07 *
Boron	12.41	8.92	ug/g	1.00	TMECC.04.05 *
Calcium	4.54	3.26	%	0.01	TMECC.04.05*
Iron	5509.70	3960.92	ug/g	5.00	TMECC.04.05 *
Magnesium	0.74	0.53	%	0.01	TMECC.04.05 *
Manganese	122.31	87.93	ug/g	1.00	TMECC.04.05 *
Sodium	0.04	0.03	%	0.01	TMECC.04.05 *
Sulphur	1167.17	839.08	ug/g	5.00	TMECC.04.05 *
Additional Parameters					
Bulk Density (as Recieved)		511	kg/m3	10	Gravimetric

* - accredited test
BDL - Below detectable levels

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