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Lab #	8755156	Report of Analysis		Report Number: 20-142-4092
Account: 25124	RUSTY WILLARD CITY OF DENTON 1100 SOUTH MAYHILL RD DENTON TX 76208			 Robert Ferris Account Manager 402-829-9871
Date Sampled: Date Received: Sample ID:	2020-05-06 2020-05-07 JAN. 2020 FEB. 2020 STOCKPILES			
				COMPOST ANALYSIS
				Total content, lbs per ton (as rec'd)
				Analysis (as rec'd)
				Analysis (dry weight)
NUTRIENTS				
Nitrogen				
Total Nitrogen	%	1.29	2.07	25.8
Organic Nitrogen	%	1.24	1.99	24.7
Ammonium Nitrogen	%	0.013	0.021	0.3
Nitrate Nitrogen	%	0.04	0.06	0.8
Major and Secondary Nutrients				
Phosphorus	%	0.58	0.93	11.6
Phosphorus as P2O5	%	1.33	2.14	26.6
Potassium	%	0.30	0.48	6.0
Potassium as K2O	%	0.36	0.58	7.2
Sulfur	%	0.44	0.71	8.8
Calcium	%	4.45	7.15	89.0
Magnesium	%	0.17	0.27	3.4
Sodium	%	0.050	0.080	1.0
Micronutrients				
Iron	ppm	22000	35364	44.0
Manganese	ppm	358	575	0.7
Boron	ppm	< 100	---	---
OTHER PROPERTIES				
Moisture	%	37.79		
Total Solids	%	62.21		1244.2
Organic Matter	%	30.10	48.38	602.0
Ash	%	31.60	50.80	632.0
Total Carbon	%	14.96	24.05	
Chloride	%	0.02	0.03	
pH		7.2		
Conductivity 1:5 (Soluble Salts)	mS/cm	3.1		

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Lab #	8755156	Biological & Physical Properties			Report Number: 20-142-4092
Account: 25124	RUSTY WILLARD CITY OF DENTON 1100 SOUTH MAYHILL RD DENTON TX 76208			 Robert Ferris Client Service Representative 402-829-9871	
Date Sampled: Date Received: Sample ID:	2020-05-06 2020-05-07 JAN. 2020 FEB. 2020 STOCKPILES			COMPOST ANALYSIS	
	Analysis (as rec'd)	Analysis (dry weight)	Units	Detection Limit	Method
Biological Properties					
Germination	100		%	1	TMECC 05.05A
Germination Vigor	96		%	1	TMECC 05.05A
CO ₂ OM Evolution	0.22		mgCO ₂ -C/gOM/day	0.01	TMECC 05.08B
CO ₂ Solids Evolution	0.17		mgCO ₂ -C/gTS/day	0.01	TMECC 05.08B
Fecal Coliform		< 0.2	mpn/g	0.2	EPA 1681
Salmonella		< 0.26	mpn/4g	0.26	EPA 1682
Stability Rating	Stable		N/A	N/A	TMECC 05.08B
Physical Properties					
Bulk Density (Loose)	944		lbs/cu yard	1	WT/VOL
Bulk Density (Packed)	1449		lbs/cu yard	1	WT/VOL
Film Plastics	n.d.		%	0.25	Microscopic
Glass Fragments	n.d.		%	0.25	Microscopic
Hard Plastics	n.d.		%	0.25	Microscopic
Metal Fragment	n.d.		%	0.25	Microscopic
Sharps	Absent		---	---	Microscopic
Max. Particle Length		1.5	inches	N/A	TMECC Sieve
Sieve % Passing 3"		100	%	0.01	TMECC Sieve
Sieve % Passing 2"		100	%	0.01	TMECC Sieve
Sieve % Passing 1.5"		100	%	0.01	TMECC Sieve
Sieve % Passing 1"		100	%	0.01	TMECC Sieve
Sieve % Passing 3/4"		100	%	0.01	TMECC Sieve
Sieve % Passing 5/8"		100	%	0.01	TMECC Sieve
Sieve % Passing 3/8"		100	%	0.01	TMECC Sieve
Sieve % Passing 1/4"		96	%	0.01	TMECC Sieve

Compost Results Interpretations

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 DATE RECEIVED: 2020-05-07

Organic Matter %		Greater than 20% indicates a desirable range for compost on a dry weight basis.
30.10	As Received	
48.38	Dry Weight	

Compost is a significant source of Organic Matter, which is an important supplier of carbon. Organic Matter improves soil and plant efficiency by improving soil physical properties, providing a source of energy to beneficial organisms, and enhancing the reservoir of soil nutrients.

C/N Ratio		20-30 indicates an ideal range for the initial compost process. 10-20 indicates an ideal range for a finished compost.
11.6:1		

All organic matter is made up of substantial amounts of carbon with lesser amounts of nitrogen. The balance of these two elements is called the Carbon/Nitrogen Ratio. For the best performance, the compost pile requires the correct proportion of carbon for energy and nitrogen for protein production. If the C:N ratio is too high (excess carbon) decomposition slows down. If the C:N ratio is too low (excess Nitrogen) the compost pile could be difficult to manage.

Moisture %		<35% = Indicates overly dry compost >55% = Indicates overly wet compost
37.79		

Moisture Percent is the measure of water present in the compost and expressed as a percentage of total weight. Moisture present affects handling and transport. Overly dry will be light and dusty while overly wet will be heavy and clumpy. A desirable moisture content of finished compost will range between 40 to 50%.

Compost Results Interpretations

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2020-05-07

Conductivity or Soluble Salts measures the conductance of electrical current in a liquid compost slurry. Excessive soluble salt content in a compost can prevent or delay seed germination and proper root growth. Conductivity analysis is done on a 1:5 basis.

Conductivity 1:5
3.1

Conductivity Level	Interpretation
Greater than 10	Very High nutrient content. Use for Ag Applications
5 - 10	High nutrient content. Use for Ag Applications
3 - 5	Higher than desirable for salt sensitive plants, some loss of vigor
0.6 - 3	Desirable range for most plants
0.3 - 0.6	Ideal range for greenhouse growth media
0.0 - 0.3	Very Low: Indicates very low nutrient status: plants may show deficiencies.

Compost Results Interpretations

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2020-05-07

pH Value

7.2

0 to 14 scale with 6 to 8 as normal pH levels for compost

A pH in the 6 to 8 pH range indicates a more mature compost

pH measures the acidity or alkalinity of the compost, and is a measurement of the hydrogen ion activity of a soil or compost on a logarithmic scale. The pH scale ranges from 0 to 14 and 7 indicates a neutral pH. Growing media with a higher pH or pH greater than 7 can benefit from a compost that has a more acidic pH or pH below 7. This type of application will possibly lower the soil pH making the soil more conducive to plants that thrive in a more acidic soil condition.

Nutrient Index (Ag Index)

>10

The Nutrient Index normally runs between 1 and 10.

The Nutrient Index is obtained by dividing the total nutrients (N,P,K) by the amount of salt (Sodium and Chloride). The higher the Nutrient Index the less chance of having a toxic buildup of Sodium (salt) in the soil.

AG INDEX CHART										
<i>salt injury possible</i>	<i>use on soils with excellent drainage characteristics, good water quality and low salts</i>				<i>you may use on soils with poor drainage, poor water quality, or high salts</i>					<i>for all soils</i>
1	2	3	4	5	6	7	8	9	10	> 10

Nutrients (N+P205+K20)

4.79

Average Nutrient Content Dry Weight

<2 = Low, >5 = High

1.5-1.5-0.5

Rating As Received

The most commonly used compost data is the amount of Nitrogen, Phosphate, and Potash (abbreviated as N,P,K) present and the information is similar to that found in common fertilizers. If a compost result has the rating 1-2-2 it means that the compost has 1% Nitrogen, 2% Phosphate and 2% Potash. Most compost tests will have a average nutrient level (N+P+K) of < 5%.

20-142-4092

REPORT DATE
May 21, 2020
 RECEIVED DATE
May 07, 2020

SEND TO
25124



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ISSUE DATE
May 21, 2020

**CITY OF DENTON
 RUSTY WILLARD
 1100 SOUTH MAYHILL RD
 DENTON TX 76208**

REPORT OF ANALYSIS
 For: (25124) CITY OF DENTON
 COMPOST ANALYSIS

Analysis	Level Found		Reporting		Method	Analyst- Date	Verified- Date
	As Received	Dry Weight	Units	Limit			

Sample ID: **JAN. 2020 FEB. 2020 STOCKPILES** Lab Number: **8755156** Date Sampled: **2020-05-06 0630**

Cadmium (total)	1.59	2.55	mg/kg	0.50	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Chromium (total)	21.3	34.3	mg/kg	1.00	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Mercury (total)	0.09	0.14	mg/kg	0.05	EPA 7471	thh1-2020/05/14	kkh9-2020/05/14
Lead (total)	7.0	11.2	mg/kg	5.0	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Molybdenum (total)	2.4	3.8	mg/kg	1.0	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Nickel (total)	8.5	13.6	mg/kg	1.0	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Selenium (total)	n.d.	n.d.	mg/kg	10.0	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Zinc (total)	177.5	285.3	mg/kg	2.0	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Copper (total)	139	224	mg/kg	1	EPA 6010	ery3-2020/05/12	kkh9-2020/05/14
Arsenic (total)	3.34	5.37	mg/kg	0.50	EPA 6020	thh1-2020/05/14	kkh9-2020/05/14

EPA 1681 holding time of < 24 hours from sampling to laboratory set up of samples for biosolids and compost has been exceeded. Individual states enforce different holding times for compost or biosolids so please contact the regulatory body in your state for their requirements.

EPA 1682 holding time of < 6 hours from sampling to laboratory set up of samples for biosolids and compost has been exceeded. If a level of Salmonella was reported, the value would be considered an estimate. Individual states enforce different holding times for compost or biosolids so please contact the regulatory body in your state for their requirements.
 n.d. = not detected , ppm = parts per million, mg/kg

For questions please contact:

The result(s) issued on this report only reflect the analysis of

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Rob Ferris
 Account Manager

may any reference be made without prior written authorization.



US COMPOSTING COUNCIL

OFFICIAL Seal of Testing Assurance
Compost Sample Chain of Custody Form

STA Laboratory: **Midwest Laboratories** Tel: **402-334-7770**
 Address: **13611 B Street** FAX: _____
 City, State Zip code: **Omaha NE 68144** Email: _____

Client/Reporting Company: **City of Denton** Tel: **940-349-8626**
 Contact Name: **Billy Downey** FAX: _____
 Billing Address: **1100 South-Mayhill Road** Email: _____
 City, State Zip code: **Denton, Texas 76208**

Send Results to:
 City, State Zip code: _____

Name or Source of Sample(s):
 Name of Person(s), Sample Collector(s): **Billy Downey**

LABORATORY USE ONLY Storage Locations
 Freezer _____ Cold Room _____ Storage Shelf _____

Sample Condition: _____
 Temperature: _____ Moisture: _____

Sample Type: POINT COMPOSITE STRATIFIED INTERVAL
 P.O. Number: _____

USCC Member: YES NO

SELECTION OF ANALYSIS. Refer to <http://www.tnec.org/cap/methods.html> for details.
 STA Suite; State DOT Tests (indicate State); A, B, C - Specify other tests in fields A through C, (e.g., tests required for regulated samples, etc.). NOTE! STA analytical results via the STA Compost Technical Data Sheet and this Chain of Custody form are submitted to STA program management.

A B C

Client Sample ID and Special Instructions	1. List Feedstocks 2. Check all that apply 3. List % by volume. (Optional)	Collection Date/Time	Sample Matrix	Composting Operation Type	Shipping Temperature	Indicate Compost Analysis Requirements (*identify state)	LAB USE ONLY Job Number & Sample Status
Jan. 2020	<input checked="" type="checkbox"/> Green waste <input type="checkbox"/> Manure	Date 5/6/2020	Compost <input checked="" type="checkbox"/> Feedstock <input type="checkbox"/> Mulch <input type="checkbox"/>	Windrow <input checked="" type="checkbox"/> Static pile <input type="checkbox"/> In-Vessel <input type="checkbox"/>	Ambient <input type="checkbox"/> Wet Ice <input checked="" type="checkbox"/> Dry Ice <input type="checkbox"/>	STA Suite State DOT Identify State A B C	
Feb. 2020	<input checked="" type="checkbox"/> Food <input type="checkbox"/> Biosolids	Time 6:30 am					
Stockpiles	<input type="checkbox"/> MSW <input type="checkbox"/> Wood	Initials BD					

INFORM THE STA LABORATORY AND SPECIFY THE REQUIRED LABORATORY TESTS WHEN SUBMITTING REGULATED COMPOST SAMPLES (please use spaces A, B and C provided above).

PLEASE PROVIDE SPECIFIC FEEDSTOCK AND OPERATIONAL DETAIL IN THE SPACE PROVIDED.
 YOUR VOLUNTEERED INFORMATION PROVIDES USCC STANDARDS AND PRACTICES COMMITTEE WITH CRUTIAL DATA NEEDED TO BETTER UNDERSTAND THE COMPOSTING PROCESS AND COMPOST END USES.

8755156

Releasing Signature 1 Date **5/6/2020** Time **2:30 pm** Receiving Signature 1 _____

Releasing Signature 2 _____ Date _____ Time _____ Receiving Signature 2 _____

Releasing Signature 3 _____ Date _____ Time _____ Receiving Signature 3 _____

Releasing Signature 4 _____ Date _____ Time _____ Receiving Signature 4 _____

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 Samples: Page: 1 / 1
 Calvin J Sterkel Colombo
 2020 05 07 11:07

1.6%
 TCS
 JRI