



Annual Composting Facility Report

July 1st, 2024 (Year) – June 30th, 2025 (Year)
Due July 31st

CITY OF DAVENPORT SLUDGE
COMPOSTING FACILITY

82-COM-12-93

TODD JONES
2707 RAILROAD AVE
PO BOX 3606
DAVENPORT IA 52802

Send completed form to:
Theresa.Stiner@dnr.iowa.gov
Land Quality Bureau
c/o Theresa Stiner
6200 Park Ave. Ste 200
Des Moines IA 50321

Please make address corrections as necessary

REGISTERED FACILITIES ONLY: check the box that describes your facility

- ☐ Yard waste only (vegetative matter such as grass clippings, leaves, garden waste, brush, and trees)
- ☐ Food residuals singly or in combination with yard waste and/or agricultural waste (includes but is not limited to manure, crop residuals, bedding, and other vegetative by-products produced during farm processing. Dead animals are not included). Food waste and yard waste received from off premises is two tons or less per week. (If food waste and yard waste received from off premises is greater than two tons per week complete the Permitted Facilities section.)
- ☐ Dead farm animals and bulking agent only. Compost facility owner is owner of at least some of the sites where animals are generated. (If Compost facility owner does not own any of the sites where animals are generated or other materials are also composted complete the Permitted Facilities section.)

PERMITTED FACILITIES ONLY: check types of materials accepted and provide tonnage

- | | |
|---|------------------------|
| <input checked="" type="checkbox"/> Yard Waste | tonnage: <u>14,568</u> |
| <input type="checkbox"/> Wood (other than yard waste) | tonnage: _____ |
| <input type="checkbox"/> Agricultural waste | tonnage: _____ |
| <input type="checkbox"/> Animal mortalities | tonnage: _____ |
| <input checked="" type="checkbox"/> Sewage Sludge | tonnage: <u>26,280</u> |
| <input type="checkbox"/> Industrial sludge | tonnage: _____ |
| <input type="checkbox"/> Food residuals | tonnage: _____ |
| <input type="checkbox"/> Paper | tonnage: _____ |
| <input type="checkbox"/> Other (specify): _____ | tonnage: _____ |

Total tonnage of material composted

tonnage: 40,848

Total capacity of the facility (maximum tons that can be composted per year): tonnage: 60,000 - ESTIMATE

FINISHED COMPOST MARKETING OR USED. Provide information about the amount of finished compost REMOVED from the Facility for the following uses. If you answer "yes" to any question, please provide tonnage information for this reporting period.

Amount of finished composted REMOVED from the Facility: 15,487 Tons/year

Is the finished Compost: (check all that apply)

☒ Sold 15,487 tons/year

☐ Given away _____ tons/year

☐ Used by your organization _____ tons/year

Is your product registered with the Iowa Department of Agriculture & Land Stewardship? ☒ Yes ☐ No

Questions? Call or email:

Theresa Stiner, Project Officer, theresa.stiner@dnr.iowa.gov, (515) 721-7979

12/2021 cmc

COMPOST FACILITY OPERATION INFORMATION. In this section provide information as to how the composting facility operates.

What method/s of composting is employed at the facility

- ☐ Turned piles/windrows ☒ Aerated static piles/windrows ☐ Vermicompost
☐ In-vessel ☐ Other (please describe) _____
☐ Facility is enclosed

Has the facility operator taken and passed an approved composting course?

- ☒ Yes, has taken and passed a composting operator training course
☐ No, has **not** taken a composting operator training course

PERMITTED COMPOSTING FACILITIES ONLY. Each composting facility is required by IAC Chapter 105.9(4) to test its compost to make sure that the concentrations of all metals and fecal coliform or Salmonella sp. do not exceed regulated levels. Please attach a copy of the test results to this form, making sure that the applicable units (reference 105) are clearly recorded. All composting facilities are required to take biweekly temperature readings of compost piles, and weekly readings of moisture levels. Facilities are not required to report these readings on this annual form, but should keep this information on file to be referenced if necessary.

How often is the finished compost product analyzed?

- ☐ Never ☒ Monthly ☐ Twice a year ☐ Annually ☐ Other (please describe) _____

CERTIFICATION

I certify under penalty of law that I am the owner, operator, or authorized representative of the owner or operator and that I have examined and am familiar with the information reported above, and that I believe the information is true, accurate and complete.

Signature: _____

Date: _____

Name & agency of Person Certifying: Robert Bartleson - City of Davenport

Email: Robert.BARTLESON@DavenportIowa.com Phone Number: 563-988-2100 Fax: 563-328-7229

Additional Comments:

Questions? Call or email:

Theresa Stiner, Project Officer, theresa.stiner@dnr.iowa.gov, (515) 721-7979
12/2021 cmc

Davenport Compost Facility 2024 Compost Analysis

MONTHLY AVERAGE												
	Sample Date	Laboratory	Arsenic(AS)	Cadmium(Cd)	Copper(Cu)	Lead(Pb)	Mercury(Hg)	Nickel(Ni)	Selenium(Se)	Zinc(Zn)	Fecal Coliform MPN/4 g dry wt.	Salmonella MPN/4 g dry wt.
1	01/04/24	Soil Control Lab	3.4	<1.0	190	28	<1.0	11	2.9	390	<7.5	<3
2	02/12/24	Soil Control Lab	3.2	<1.0	190	25	<1.0	11	2.7	380	<7.5	<3
3	03/07/24	Soil Control Lab	2.9	1.5	170	23	<1.0	10	2.5	350	44	<3
4	04/10/24	Soil Control Lab	2.7	<1.0	150	23	<1.0	11	2.1	290	<7.5	<3
5	05/02/24	Soil Control Lab	3.3	1.1	200	65	<1.0	11	3.1	410	<7.5	<3
6	06/06/24	Soil Control Lab	3.1	1.1	160	22	<1.0	11	2.2	340	<7.5	<3
7	07/10/24	Soil Control Lab	2.6	1.1	150	23	<1.0	11	1.8	320	<7.5	<3
8	08/07/24	Soil Control Lab	3.1	1.0	160	22	<1.0	13	2.5	320	<7.5	<3
9	09/10/24	Soil Control Lab	3.0	0.9	130	23	<1.0	11	2.0	270	<7.5	<3
10	10/10/24	Soil Control Lab	3.6	1.1	150	24	<1.0	13	2.5	320	<7.5	<3
11	11/05/24	Soil Control Lab	3.0	0.9	150	24	<1.0	11	2.5	270	<7.5	<3
12	12/10/24	Soil Control Lab	3.3	0.9	140	28	<1.0	12	2.5	280	<7.5	<3
MONTHLY AVERAGE			3.1	1.1	161.7	27.5	<1.0	11.3	2.4	328.33	10.5	<3
EPA 503 LIMITS			41	39	1500	300	17	420	36	2800	1000	<3

Note: Metals Reported in mg/kg

SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

Account #: 5060083-1/1-1701

Group: Jun25A #53

Reporting Date: June 20, 2025

Davenport Compost Facility
P.O. Box 3606
Davenport, IA 52808
Attn: Robert BartlesonDate Received: 06 Jun. 25
Sample Identification: Soil Builder Compost
Sample ID #: 5060083 - 1/1

Nutrients	Dry wt.	As Rcvd.	units	Stability Indicator:	
Total Nitrogen:	3.2	1.7	%	CO2 Evolution	Respirometry
Ammonia (NH ₄ -N):	3200	1700	mg/kg	mg CO ₂ -C/g OM/day	2.2
Nitrate (NO ₃ -N):	5.2	2.8	mg/kg	mg CO ₂ -C/g TS/day	1.3
Org. Nitrogen (Org.-N):	2.9	1.5	%	Stability Rating	stable
Phosphorus (as P ₂ O ₅):	3.7	2.0	%		
Phosphorus (P):	16000	8700	mg/kg	Maturity Indicator: Cucumber Bioassay	
Potassium (as K ₂ O):	0.69	0.37	%	Compost:Vermiculite (v:v)	1:2
Potassium (K):	5800	3100	mg/kg	Emergence (%)	0
Calcium (Ca):	4.1	2.2	%	Seedling Vigor (%)	NA
Magnesium (Mg):	0.72	0.38	%	Description of Plants	
Sulfate (SO ₄ -S):	2100	1100	mg/kg		
Boron (Total B):	32	17	mg/kg	Pathogens	Results Units Rating
Moisture:	0	46.7	%	Fecal Coliform	< 7.5 MPN/g pass
Sodium (Na):	0.14	0.077	%	Salmonella	< 3 MPN/4g pass
Chloride (Cl):	0.23	0.13	%	Date Tested: 06 Jun. 25	
pH Value:	NA	8.67	unit		
Bulk Density:	19	36	lb/cu ft	Physical Contaminants**	% by dry wt
Carbonates (CaCO ₃):	72	38	lb/ton	Total Plastic	< 0.1
Conductivity (EC5):	7.5	NA	mmhos/cm	Film Plastic	< 0.1
Organic Matter:	57.6	30.7	%	Glass	< 0.1
Organic Carbon:	32.0	17.0	%	Metal	< 0.1
Ash:	42.4	22.6	%	Sharps	ND
C/N Ratio	9.7	9.7	ratio	Total	< 0.5
AgIndex	> 10	> 10	ratio		
Metals	Dry wt.	EPA Limit	units	Size Distribution	
Aluminum (Al):	5800	-	mg/kg	MM	% by weight
Arsenic (As):	3.5	41	mg/kg	> 50	0.0
Cadmium (Cd):	1.1	39	mg/kg	25 to 50	0.0
Chromium (Cr):	34	-	mg/kg	16 to 25	0.0
Cobalt (Co):	3.8	-	mg/kg	9.5 to 16	0.5
Copper (Cu):	170	1500	mg/kg	6.3 to 9.5	5.6
Iron (Fe):	13000	-	mg/kg	4.0 to 6.3	14.0
Lead (Pb):	25	300	mg/kg	2.0 to 4.0	20.1
Manganese (Mn):	860	-	mg/kg	< 2.0	59.9
Mercury (Hg):	< 1.0	17	mg/kg	**Greater than 4mm in size (Sharps greater than 2mm)	
Molybdenum (Mo):	6.3	75	mg/kg		
Nickel (Ni):	15	420	mg/kg		
Selenium (Se):	2.3	100	mg/kg		
Zinc (Zn):	320	2800	mg/kg		

Analyst: Assaf Sadeh



*Sample was received and handled in accordance with TMECC procedures.

Account No.:
5060083 - 1/1 - 1701
Group: Jun25A No. 53

Date Received
Sample i.d.
Sample I.d. No.

06 Jun. 25
Soil Builder Compost
1/1 5060083

INTERPRETATION:

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Is Your Compost Stable?

Respiration Rate

2.2 mg CO₂-C/
g OM/day

+++++++
< Stable >|< Moderately Unstable >|< Unstable >|< High For Mulch

Is Your Compost Mature?

AmmoniaN/NitrateN ratio

620 Ratio

+++++++
VeryMature>|< Mature >|< Immature

Ammonia N ppm

3200 mg/kg
dry wt.

+++++++
VeryMature>|< Mature >|< Immature

Nitrate N ppm

5.2 mg/kg
dry wt.

++++
< Immature >|< Mature

Cucumber Emergence

0.0 percent

+
< Immature >|< Mature

Is Your Compost Safe Regarding Health?

Fecal Coliform

< 1000 MPN/g dry wt.

+++++++
< Safe >|< High Fecal Coliform

Salmonella

Bulk Density :
Less than 3 /4g dry wt.

+++++++
< Safe (none detected) >|< High Salmonella Count(> 3 per 4 grams)

Metals

US EPA 503
Pass dry wt.

+++++++
< All Metals Pass >|< One or more Metals Fail

Does Your Compost Provide Nutrients or Organic Matter?

Nutrients (N+P₂O₅+K₂O)

7.5 Percent
dry wt.

+++++++
< Low >|< Average >|< High Nutrient Content

AgIndex (Nutrients / Sodium and Chloride Salts)

((N+P₂O₅+K₂O) / (Na + Cl))

> 15 Ratio

+++++++
Na & Cl >|< Nutrient and Sodium and Chloride Provider >|< Nutrient Provider

Plant Available Nitrogen (PAN)

Estimated release for first season

10 lbs/ton
wet wt.

+++++++
Low Nitrogen Provider>|< Average Nitrogen Provider >|< High Nitrogen Provider

C/N Ratio

9.7 Ratio

+++++++
< Nitrogen Release >|< N-Neutral >|< N-Demand>|< High Nitrogen Demand

Soluble Available Nutrients & Salts (EC₅ w/w dw)

7.5 mmhos/cm
dry wt.

+++++++
SloRelease>|< Average Nutrient Release Rate >|< High Available Nutrients

Lime Content (CaCO₃)

72 Lbs/ton
dry wt.

+++++++
< Low >|< Average >|< High Lime Content (as CaCO₃)

What are the physical properties of your compost?

Percent Ash

42.4 Percent
dry wt.

+++++++
< High Organic Matter >|< Average >|< High Ash Content

Sieve Size % > 6.3 MM (0.25")

6.1 Percent
dry wt.

+++++++
All Uses >|< Size May Restrict Uses for Potting mix and Golf Courses

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06 Jun. 25
Soil Builder Compost
1/1 5060083

INTERPRETATION:

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Is Your Compost Stable?

Respiration Rate

2.2 Low: Good for all uses mg CO₂-C/g OM/day

The respiration rate is a measurement of the biodegradation rate of the organic matter in the sample (as received). The respiration rate is determined by measuring the rate at which CO₂ is released under optimized moisture and temperature conditions.

Is Your Compost Mature?

Ammonia:N:nitrate:N ratio

620 immature

Ammonia N ppm

3200 immature

Nitrate N ppm

5.2 immature

Composting to stabilize carbon can occur at such a rapid rate that sometimes phytotoxins remain in the compost and must be neutralized before using in high concentrations or in high-end uses. This step is called curing. Typically ammonia is in excess with the break-down of organic materials resulting in an increase in pH. This combination results in a loss of volatile ammonia (it smells). Once this toxic ammonia has been reduced and the pH drops, the microbes convert the ammonia to nitrates. A low ammonia + high nitrate score is indicative of a mature compost, however there are many exceptions. For example, a compost with a low pH (<7) will retain ammonia, while a compost with high lime content can lose ammonia before the organic fraction becomes stable. Composts must first be stable before curing indicators apply.

Cucumber Bioassay

0.0 Percent

Cucumbers are chosen for this test because they are salt tolerant and very sensitive to ammonia and organic acid toxicity. Therefore, we can germinate seeds in high concentrations of compost to measure phytotoxic effects without soluble salts being the limiting factor. Values above 80% for both percent emergence and vigor are indicative of a well-cured compost. Exceptions include very high salts that affect the cucumbers, excessive concentrations of nitrates and other nutrients that will be in range when formulated to make a growing media.

Is Your Compost Safe Regarding Health?

Fecal Coliform

< 1000 / g dry wt.

Fecal coliforms can survive in both aerobic and anaerobic conditions and is common in all initial compost piles. Most human pathogens occur from fecal matter and all fecal matter is loaded in fecal coliforms. Therefore fecal coliforms are used as an indicator to determine if the chosen method for pathogen reduction (heat for compost) has met the requirements of sufficient temperature, time and mixing. If the fecal coliforms are reduced to below 1000 per gram dry wt. it is assumed all other pathogens are eliminated. Potential problems are that fecal coliform can regrow during the curing phase or during shipping. This is because the conditions are now more favorable for growth than during the composting process.

Salmonella Bacteria

Less than 3 / 4g dry wt. Salmonella is not only another indicator organism but also a toxic microbe. It has been used in the case of biosolids industry to determine adequate pathogen reduction.

Metals

Pass

The ten heavy metals listed in the EPA 503 regulations are chosen to determine if compost can be applied to ag land and handled without toxic effects. Most high concentrations of heavy metals are derived from woodwaste feedstock such as chrome-arsenic treated or lead painted demolition wood. Biosolids are rarely a problem.

Does Your Compost Provide Nutrients or Organic Matter?

Nutrients (N+P₂O₅+K₂O)

7.5 High nutrient content

This value is the sum of the primary nutrients Nitrogen, Phosphorus and Potassium. Reported units are consistent with those found on fertilizer formulations. A sum greater than 5 is indicative of a compost with high nutrient content, and best used to supply nutrients to a receiving soil. A sum below 2 indicates low nutrient content, and is best-used to improve soil structure via the addition of organic matter. Most compost falls between 2 and 5.

Account No.:
5060083 - 1/1 - 1701
Group: Jun25A No. 53

Date Received 06 Jun. 25
Sample i.d. Soil Builder Compost
Sample I.d. No. 1/1 5060083

INTERPRETATION:

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AgIndex (Nutrients/Na+Cl)

20 High nutrient ratio Composts with low AgIndex values have high concentrations of sodium and/or chloride compared to nutrients. Repeated use of a compost with a low AgIndex (< 2) may result in sodium and/or chloride acting as the limiting factor compared to nutrients, governing application rates. These composts may be used on well-draining soils and/or with salt-tolerant plants. Additional nutrients from another source may be needed if the application rate is limited by sodium or chloride. If the AgIndex is above 10, nutrients optimal for plant growth will be available without concern of sodium and/or chloride toxicity. Composts with an AgIndex of above 10 are good for increasing nutrient levels for all soils. Most composts score between 2 and 10. Concentrations of nutrients, sodium, and chloride in the receiving soil should be considered when determining compost application rates. The AgIndex is a product of feedstock quality. Feedstock from dairy manure, marine waste, industrial wastes, and halophytic plants are likely to produce a finished compost with a low AgIndex.

Plant Available Nitrogen (lbs/ton)

10 Average N Provider Plant Available Nitrogen (PAN) is calculated by estimating the release rate of Nitrogen from the organic fraction of the compost. This estimate is based on the respiration rate, ammonia, and nitrate values. Despite the PAN value of the compost, additional sources of Nitrogen may be needed during the growing season to offset the Nitrogen demand of the microbes present in the compost. With ample nutrients these microbes can further breakdown organic matter in the compost and release bound Nitrogen. Nitrogen demand based on a high C/N ratio is not considered in the PAN calculation because additional Nitrogen should always be supplemented to the receiving soil when composts with a high C/N ratio are applied.

C/N Ratio

9.7 Indicates maturity As a guiding principal, a C/N ratio below 14 indicates maturity and above 14 indicates immaturity, however, there are many exceptions. Large woodchips (>6.3mm), bark, and redwood are slow to breakdown and therefore can result in a relatively stable product while the C/N ratio value is high. Additionally, some composts with chicken manure and/or green grass feedstocks can start with a C/N ratio below 15 and are very unstable. A C/N ratio below 10 supplies Nitrogen, while a ratio above 20 can deplete Nitrogen from the soil. The rate at which Nitrogen will be released or used by the microbes is indicated by the respiration rate. If the respiration rate is too high the transfer of Nitrogen will not be controllable.

Soluble Nutrients & Salts (EC5 w/w dw - mmhos/cm)

7.5 Average salts This value refers to all soluble ions including nutrients, sodium, chloride and some soluble organic compounds. The concentration of salts will change due to the release of salts from the organic matter as it degrades, volatilization of ammonia, decomposition of soluble organics, and conversion of molecular structure. High salts + high AgIndex is indicative of a compost high in readily available nutrients. The application rate of these composts should be limited by the optimum nutrient value based on soil analysis of the receiving soil. High Salts + low AgIndex is indicative of a compost low in nutrients with high concentrations of sodium and/or chloride. Limit the application rate according to the toxicity level of the sodium and/or chloride. Low salts indicates that the compost can be applied without risking salt toxicity, is likely a good source of organic matter, and that nutrients will release slowly over time.

Lime Content (lbs. per ton)

72 High lime content Compost high in lime or carbonates are often those produced from chicken manure (layers) ash materials, and lime products. These are excellent products to use on a receiving soil where lime has been recommended by soil analysis to raise the pH. Composts with a high lime content should be closely considered for pH requirements when formulating potting mixes.

Physical Properties

Percent Ash

42.4 Average ash content Ash is the non-organic fraction of a compost. Most composts contain approximately 50% ash (dry weight basis). Compost can be high in ash content for many reasons including: excess mineralization (old compost), contamination with soil base material during turning, poor quality feedstock, and soil or mineral products added. Finding the source and reducing high ash content is often the fastest means to increasing nutrient quality of a compost.

Particle Size % > 6.3 MM (0.25")

6.1 May restrict use Large particles may restrict use for potting soils, golf course topdressings, seed-starter mixes, and where a fine size distribution is required. Composts with large particles can still be used as excellent additions to field soils, shrub mixes and mulches.

Appendix:	
Plant Available Nitrogen (PAN) calculations:	
PAN = (X * (organic N)) + ((NH ₄ -N) + (NO ₃ -N))	
X value =	If RR < 2 then X = 0.1
	If RR =2.1 to 5 then X = 0.2
	If RR =5.1 to 10 then X = 0.3
	If RR > 10 then X = 0.4
Note: If C/N ratio > 15 additional N should be applied.	
RR = Respiration rate	
Estimated available nutrients for use when calculating application rates	
lbs/ton (As Rcvd.)	
Plant Available Nitrogen (PAN)	9.5
Ammonia (NH ₄ -N)	3.40
Nitrate (NO ₃ -N)	0.01
Available Phosphorus (P ₂ O ₅ *0.64)	25.6
Available Potassium (K ₂ O)	7.5