WINR-CENTER, WOODBINE SITE
PROPOSED COMPOST FACILITY
HARRISON COUNTY, IOWA

ProAg Job No. 21-055 **December 2025**

ProAg Engineering, Inc.

Nicholaus J. Rowe, P.E.
77402 U.S. Highway 71
P.O. Box 181
Jackson, MN 56143

507-849-7200 – Office
507-841-3269 – Cell
nic@proageng.com

Justin D. Sprague, P.E.
302 Broadway Street
Audubon, IA 50025

712-563-2168 – Office
507-329-2440 – Cell
justin@proageng.com

RECEIVED

DEC 23 2025

ProAg Engineering, Inc.

Nicholaus J. Rowe, P.E.
77402 U.S. Highway 71
P.O. Box 181
Jackson, MN 56143
507-849-7200
nic@proageng.com

Justin D. Sprague, P.E.
302 Broadway Street
Audubon, IA 50025

712-563-2168
justin@proageng.com

19 December 2025

Ms. Theresa Stiner
IDNR
502 E. 9th Street
Des Moines, IA 50319

RE: WINR-Center, Woodbine Site
Proposed Compost Facility
Harrison County, Iowa
ProAg Project No. 21-055

Ms. Stiner:

On behalf of Mr. Abe Sandquist and WINR-Center, Woodbine Site, we are now submitting the application and supporting documents for the proposed compost facility. The location of the site is the SE ¼ of Section 35, T-80-N, R-42-W, Harrison County, Iowa. The location is on property owned by Natural Fertilizer Products, and the contact person is Mr. Sandquist at 712-647-2810.

Enclosed please find the following:

IDNR Form 50A (542-1602), 12/2021, Compost Facility Permit Application
Section B. Site Maps
Section C. Organizational Chart
Section D. Operator Certification
Section E. Site Design Plan
Section F. Site Operation Plan
Section G. Emergency Response and Remedial Action Plan
Section H. Site Closure Plan
Section I. Proof of Financial Assurance and Closure Cost Estimate
References
Engineering drawings

We trust the above information is adequate for your review and approval. Should you have any questions, please do not hesitate to call me at 712-563-2168.

Respectfully submitted,

Justin D. Sprague, P.E.
ProAg Engineering, Inc.

RECEIVED
DEC 23 2025

Enclosures
cc: Abe Sandquist, WINR-Center

IOWA DEPARTMENT OF NATURAL RESOURCES

COMPOST FACILITY

PERMIT APPLICATION FORM 50A

☒ New Permit

☐ Permit Renewal (permit number) _____ -SDP- _____ - _____ -COM

☐ Permit Amendment

RECEIVED
DEC 23 2025

SECTION 1. FACILITY CONTACT INFORMATION

Facility

Name: WINR-Center, Woodbine Site Phone: 712-647-2810

Address: 414 Walker Street City, State, Zip: Woodbine, IA 51579

County: Harrison

Responsible Official for the Facility

Name: Abe Sandquist Phone: 712-647-2810

Address: 414 Walker Street

City, State, Zip: Woodbine, IA 51579 E-mail: asandquist@nfsvc.com

Owner of Site

Name: Natural Fertilizer Products, Inc Phone: 712-647-2810

Address: 414 Walker Street

City, State, Zip: Woodbine, IA 51579 E-mail: asandquist@nfsvc.com

Site Legal Description

Legal Description: Parcel B W1/2 SE Boyer-Wood

¼, ¼, Section, Township (N), Range (E/W), County: SW 1/4, Sect 35, T80N, R42W, Harrison County

Facility Owner/Operator

Name: Natural Fertilizer Products, Inc Phone: 712-647-2810

Address: 414 Walker Street

City, State, Zip: Woodbine, IA 51579 E-mail: asandquist@nfsvc.com

Design Engineer (PE) (if any)

Name: Justin Sprague Phone: 712-563-2168

Address: 302 Broadway Street

City, State, Zip: Audubon, IA 50025 E-mail: justin@proageng.com

Iowa Engineer License #: 23486 Expiration Date: Dec 31, 2025

SECTION 2. SITE INFORMATION

☐ **This facility is part of the following solid waste comprehensive planning area:**

Planning Area: _____ Date of Last Approved Plan: _____

Days and hours of operation of the facility: Mon-Fri 8am-5pm

Open to the public? ☐ Yes ☒ No

Type and expected weight (tons) of solid waste feedstocks to be handled per day, week and year at the facility:

per day various feedstocks (see design & operations plan) 68.3125 tons per day

per week

per year 8,880.625 tons per year

SECTION 3. PERMIT APPLICATION CHECKLIST

Checking the appropriate boxes below certifies that the documents submitted in conjunction with this application form are complete and in compliance with the applicable chapters of the Iowa Administrative Code. While some of the documents below may have been submitted previously, updated copies of each is required to be provided with each permit renewal application, unless a prior document remains current and is identified by Doc ID# below. If an application is found by the department to be incomplete, it may be denied and returned to the applicant.

Required Documents

☐ **Section A. Executive Summary (permit renewals only)**

- Summary of modifications, if any, to the facility that occurred during the current permit cycle.
- Summary of each permit amendment, if any, that occurred during the current permit cycle to determine if it shall be included with the renewed permit, be revised or be removed.
- Provide documentation and certification as required for new permit provision requests, if any.

☒ **Section B. Site Map or Aerial Photograph (IAC 567 105.8(1))**

No Revision Required - See Doc ID#: Section B

☒ **Section C. Site Design Plan (IAC 567 105.8(2))**

No Revision Required - See Doc ID#: ProAg drawings

☒ **Section D. Site Operation Plan (IAC 567 105.8(3))**

No Revision Required - See Doc ID#: Section D

☒ **Section E. Operator Certification (IAC 567 105.10)**

No Revision Required - See Doc ID#: Section E

☒ **Section F. Site Closure Plan (IAC 567 105.13)**

No Revision Required - See Doc ID#: Section H

☒ **Section G. Proof of Financial Assurance (IAC 567 105.14)**

No Financial Assurance needed if receiving less than 5,000 tons of feedstock annually, bulking agent excluded.

SECTION 4. APPLICANT CERTIFICATION

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I further certify that the construction and operation of the above described facility will be in accordance with the plans, specifications, reports and related communications accepted by the Iowa Department of Natural Resources and on file in its office; and in accordance with conditions imposed in the permit issued by the Iowa Department of Natural Resources.

Signature of Permit Applicant: Abe Sandquist **Date:** 12-9-25

Printed Name: Abe Sandquist **Title:** Owner, Responsible Official

Application for a solid waste compost facility must be accompanied by the plans, specifications, and additional information required by the applicable solid waste rules under Iowa Administrative Code 567 Chapter 105.

Send completed application with attached information to Becky.Jolly@dnr.iowa.gov, or:

Iowa Department of Natural Resources
Land Quality Bureau
Solid Waste Section
502 E 9th St
Des Moines, IA 50319-0034

For questions concerning this application please contact the Department at 515-721-7979 or Theresa.Stiner@dnr.iowa.gov.

SECTION B. SITE MAP OR AERIAL PHOTOGRAPH

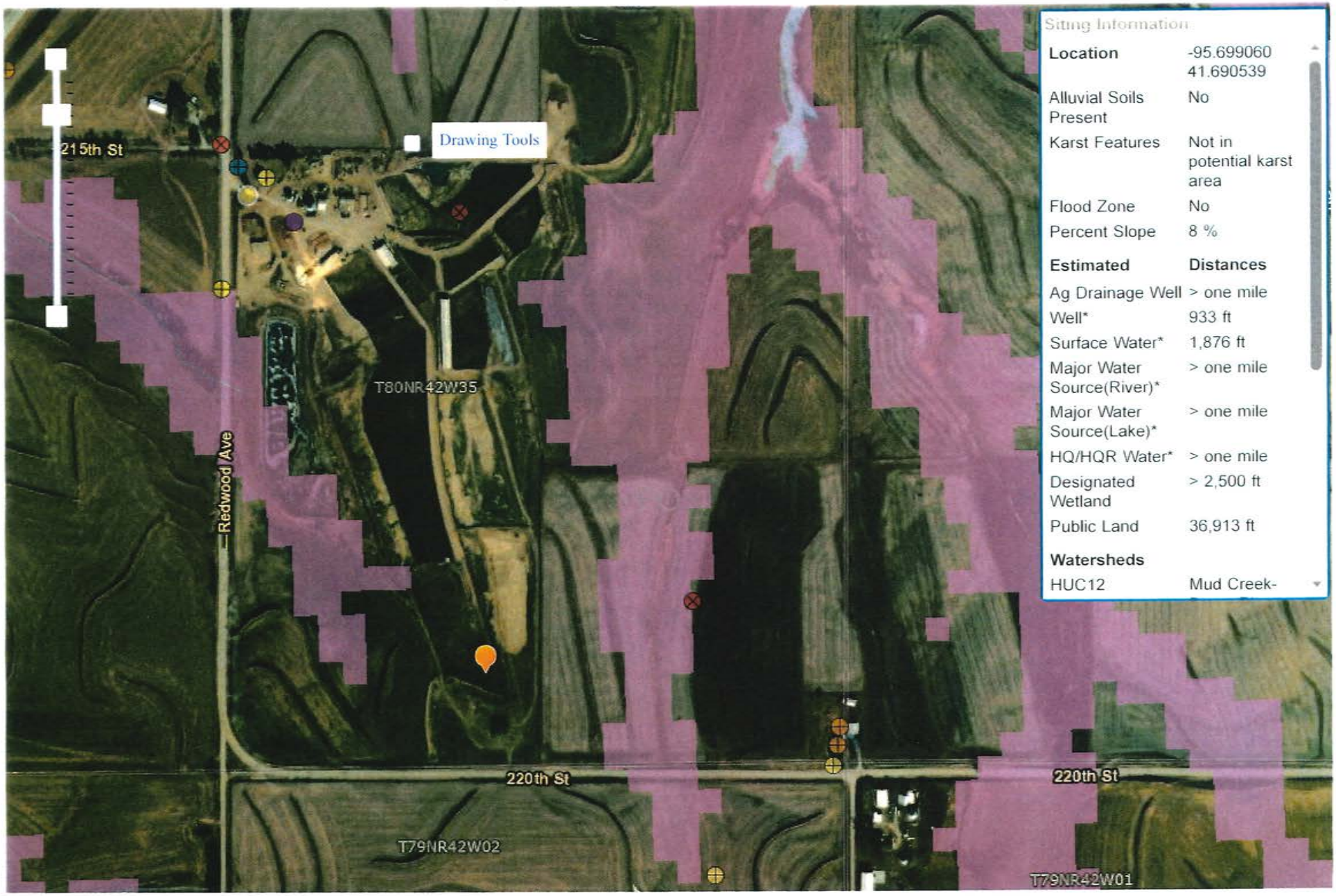
The following site maps were reviewed in the design of the compose site:

- IDNR AFO Siting Atlas
- USGS Quadrangle Topographic Map
- Soils map
- Depth to Water Table map
- FEMA Flood Hazard Boundary
- USFWS Wetlands map

IOWA DEPARTMENT OF NATURAL RESOURCES

AFO Siting

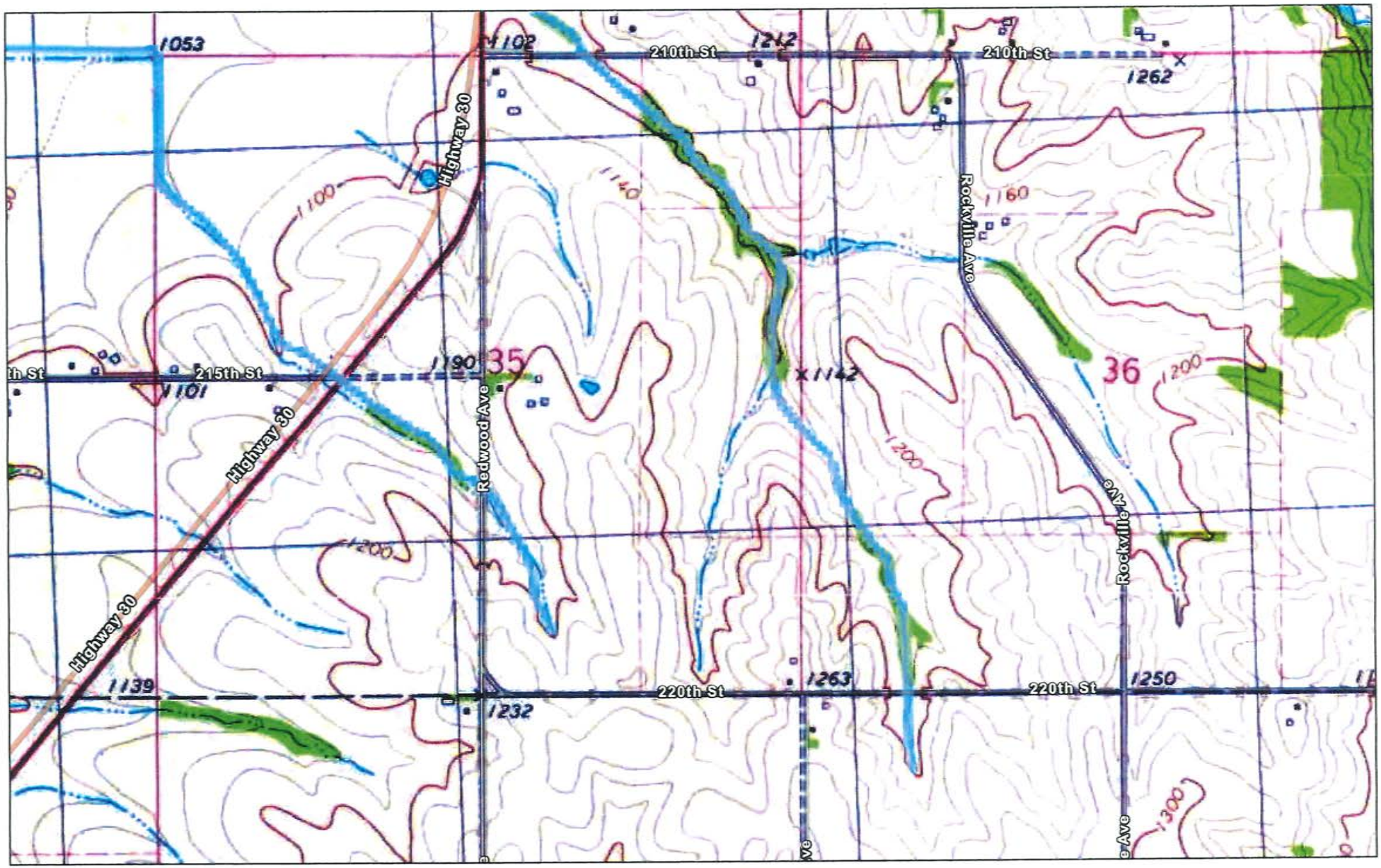
Measure Basemaps Bookmarks Mail Map Info



Siting Information

Location	-95.699060 41.690539
Alluvial Soils Present	No
Karst Features	Not in potential karst area
Flood Zone	No
Percent Slope	8 %
Estimated	**Distances**
Ag Drainage Well	> one mile
Well*	933 ft
Surface Water*	1,876 ft
Major Water Source(River)*	> one mile
Major Water Source(Lake)*	> one mile
HQ/HQR Water*	> one mile
Designated Wetland	> 2,500 ft
Public Land	36,913 ft
Watersheds	
HUC12	Mud Creek-

Iowa Geographic Map Server



6/16/2025, 3:01:55 PM

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

World Hydro Reference Overlay

Iowa - Historical USGS 24k Topographic Series

Red: Band_1

Green: Band_2

Blue: Band_3

Soil Map—Harrison County, Iowa

Map Scale: 1:4,880 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Harrison County, Iowa
Survey Area Data: Version 33, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

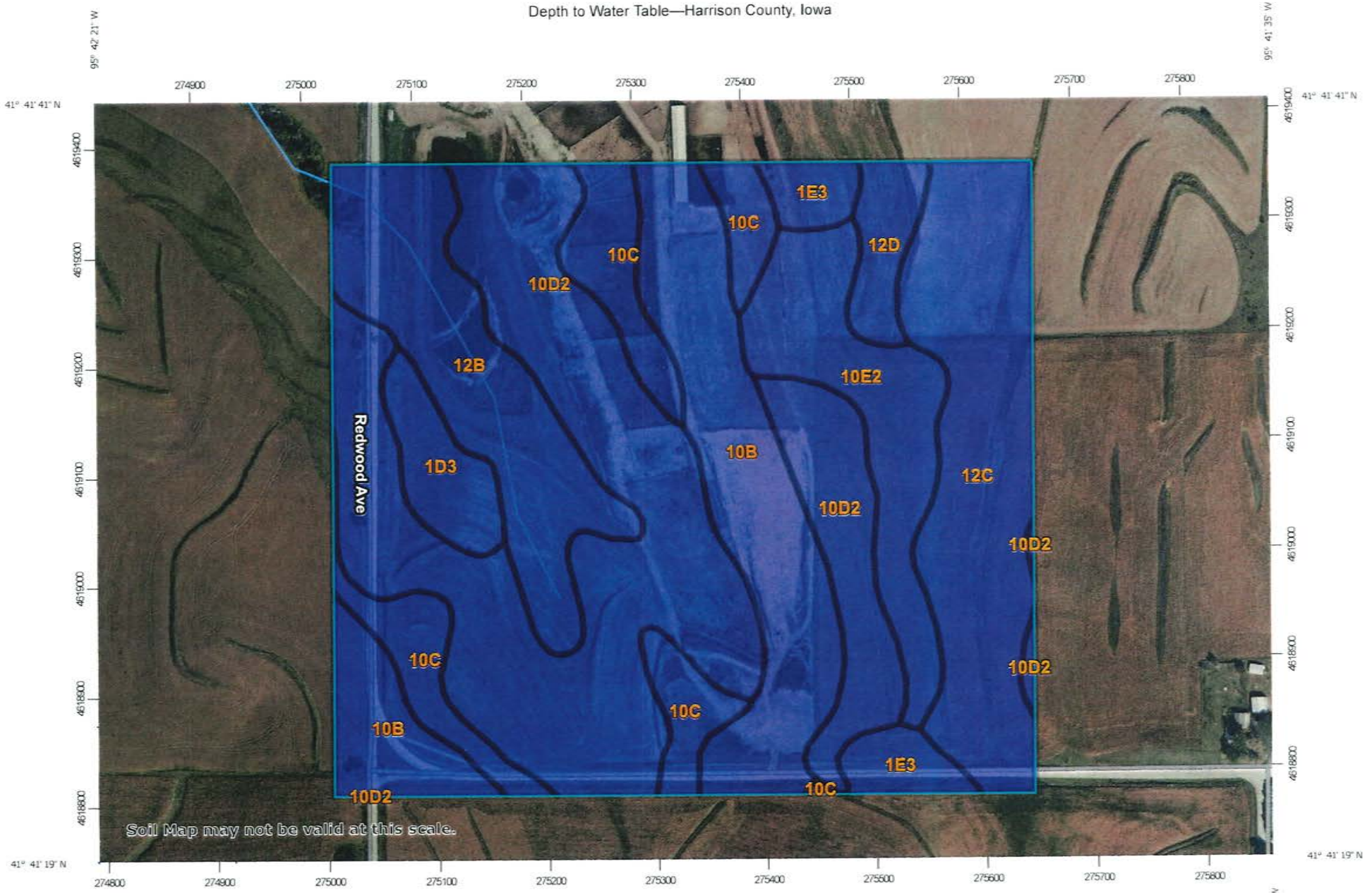
Date(s) aerial images were photographed: Sep 14, 2022—Sep 24, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1D3	Ida silt loam, 9 to 14 percent slopes, severely eroded	2.6	2.9%
1E3	Ida silt loam, 14 to 20 percent slopes, severely eroded	2.6	2.9%
10B	Monona silt loam, 2 to 5 percent slopes	14.8	16.2%
10C	Monona silt loam, 5 to 9 percent slopes	8.3	9.1%
10D2	Monona silt loam, 9 to 14 percent slopes, eroded	29.5	32.3%
10E2	Monona silt loam, 14 to 20 percent slopes, eroded	7.6	8.3%
12B	Napier silt loam, 2 to 5 percent slopes	10.4	11.4%
12C	Napier silt loam, 5 to 9 percent slopes	13.3	14.6%
12D	Napier silt loam, 9 to 14 percent slopes	2.1	2.3%
Totals for Area of Interest		**91.3**	**100.0%**

Depth to Water Table—Harrison County, Iowa



Map Scale: 1:4,880 if printed on A landscape (11" x 8.5") sheet.

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Harrison County, Iowa
Survey Area Data: Version 33, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 14, 2022—Sep 24, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
1D3	Ida silt loam, 9 to 14 percent slopes, severely eroded	>200	2.6	2.9%
1E3	Ida silt loam, 14 to 20 percent slopes, severely eroded	>200	2.6	2.9%
10B	Monona silt loam, 2 to 5 percent slopes	>200	14.8	16.2%
10C	Monona silt loam, 5 to 9 percent slopes	>200	8.3	9.1%
10D2	Monona silt loam, 9 to 14 percent slopes, eroded	>200	29.5	32.3%
10E2	Monona silt loam, 14 to 20 percent slopes, eroded	>200	7.6	8.3%
12B	Napier silt loam, 2 to 5 percent slopes	>200	10.4	11.4%
12C	Napier silt loam, 5 to 9 percent slopes	>200	13.3	14.6%
12D	Napier silt loam, 9 to 14 percent slopes	>200	2.1	2.3%
Totals for Area of Interest			**91.3**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

National Flood Hazard Layer FIRMette

FEMA

95°42'17"W 41°41'41"N

95°41'40"W 41°41'14"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Are of 1% annual chance flood with averag depth less than one foot or with drainag areas of less than one square mile
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Flood Risk due to Levee. See Notes.
- Area with Flood Risk due to Levee

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard
- Effective LOMRs
- Area of Undetermined Flood Hazard

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximat point selected by the user and does not repres an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

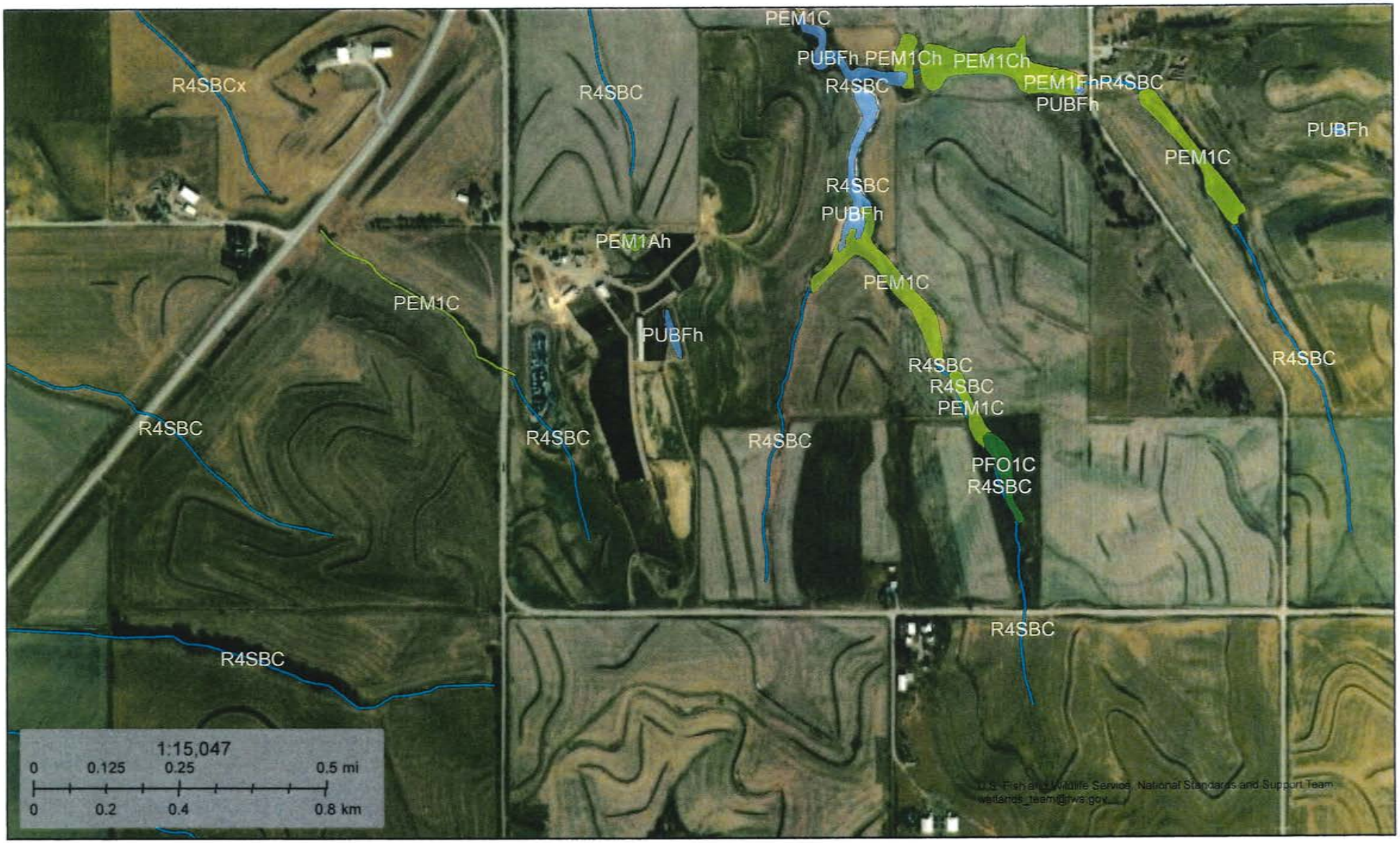
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/16/2025 at 8:06 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service

National Wetlands Inventory

21-055



June 16, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

SECTION C. ORGANIZATIONAL CHART

Management and Oversight

- **Owner / CEO**
  Abe Sandquist
  Responsible for overall business strategy, permitting compliance, and financial oversight.

- **Operations Manager**
  Trent Sprecker
  Manages daily site operations, equipment scheduling, personnel, and compliance with Iowa DNR requirements.

- **Environmental Compliance Officer**
  Derek Rothe
  Oversees all monitoring, testing, and recordkeeping protocols. Serves as primary point of contact with regulatory agencies.

Site Operations Team

- **Site Supervisor / Foreman**
  Gabe Pape
  Coordinates onsite activities, supervises labor, inspects incoming materials, and ensures quality control of composting process.

- **Equipment Operators** (e.g., loaders, screeners, windrow turners)
  Matt Barry
  Responsible for building, turning, and maintaining compost piles, as well as loading and screening finished product.

- **Laborers / General Workers**
  Part-Time Employees
  Assist with sorting incoming feedstocks, applying cover, maintaining site cleanliness, and helping with emergency tasks.

Administrative and Support Roles

- **Administrative Assistant / Office Manager**
  Angee Kirk
  Maintains records, manages invoices, assists with customer service, and files compliance reports.

- **Sales / Distribution Coordinator**
  Derek Rothe, Abe Sandquist, & Justin Bauer
  Coordinates the marketing and distribution of finished compost, tracks inventory and customer interactions.

Consultants (as needed)

- **Environmental Consultant / Engineer**
  Justin Sprage, ProAg Engineering
  Assists with permitting, site assessments, testing protocols, and technical documentation.

SECTION D. OPERATOR CERTIFICATION

Mr. Abe Sandquist has completed the Midwest Compost School by Iowa State University Extension and Outreach held on September 30, 2024.

Mr. Gabe Pape has completed the Midwest Compost School by Iowa State University Extension and Outreach held on September 30, 2024.

If responsibility for daily operations of the site is to be transferred to a designated responsible official, that individual will obtain Operator Certification prior to the transfer of responsibility.

IOWA STATE UNIVERSITY
Extension and Outreach

Certificate of Completion

presented to

Abe Sandquist

You have successfully completed the Midwest Compost School 2024 by attending all three days of the school, having completed all hand-on exercises, and passing the written exam administered at the end of the school. The school was held by Iowa State University Extension and Outreach (ISU) at the ISU Dairy Teaching Classroom and ISU Compost Facility in Ames, Iowa from September 24 to September 26, 2024.

Kapil Arora

Dr. Kapil Arora
Extension Field Engineer

September 30, 2024

Certificate Issue Date

IOWA DEPARTMENT OF NATURAL RESOURCES

Compost Facility Operator Application

☒ New Certificate ☐ Certificate Renewal – Certificate # _____

Applicant Information:

Name Abe Sandquist

Address 2270 Toledo Ave.

City Woodbine State IA Zip 51579

Phone 712-592-5042 Fax NA

Email abesandquist@gmail.com

Employment Information:

Facility Name Natural Fertilizer Products, Inc

Address 414 Walker St

City Woodbine State IA Zip 51579

Phone 712-647-2810 Fax 712-647-2834

Training Information (Include proof of completion):

Course Name: Midwest Compost School 2024

Trainer Name: Dr. Kapil Arora

Training Location: Iowa State University Dairy Teaching Facility and Compost Site, Ames, IA 50014

Date Training Held: September 24, 2024 to September 26, 2024

Signature: Abe Sandquist Date: 10/11/24

Printed Name: Abe Sandquist Title: President / Owner

Send completed application to:

Becky Jolly
Iowa Department of Natural Resources
Land Quality Bureau
6200 Park Avenue, Suite 200
Des Moines, IA 50321

For questions concerning this application please contact the Department at (515) 249-1482.

IOWA STATE UNIVERSITY
Extension and Outreach

Certificate of Completion

presented to

Gabe Pape

You have successfully completed the Midwest Compost School 2024 by attending all three days of the school having completed all hand-on exercises, and passing the written exam administered at the end of the school. The school was held by Iowa State University Extension and Outreach (ISU) at the ISU Dairy Teaching Classroom and ISU Compost Facility in Ames, Iowa from September 24 to September 26, 2024

Kapil Arora

Dr. Kapil Arora
Extension Field Engineer

September 30, 2024

Certificate Issue Date

IOWA DEPARTMENT OF NATURAL RESOURCES

Compost Facility Operator Application

☒ New Certificate ☐ Certificate Renewal – Certificate # _____

Applicant Information:

Name Gabriel J. Pape

Address 810 Normal St.

City Woodbine State IA Zip 51579

Phone 712-420-0784 Fax NA

Email g.pape56@gmail.com

Employment Information:

Facility Name Natural Fertilizer Products, Inc

Address 414 Walker St

City Woodbine State IA Zip 51579

Phone 712-647-2810 Fax 712-647-2834

Training Information (Include proof of completion):

Course Name: Midwest Compost School 2024

Trainer Name: Dr. Kapil Arora

Training Location: Iowa State University Dairy Teaching Facility and Compost Site, Ames, IA 50014

Date Training Held: September 24, 2024 to September 26, 2024

Signature: _____ Date: 10/11/24

Printed Name: Gabriel J Pape Title: Operations Supervisor

Send completed application to:

Becky Jolly
Iowa Department of Natural Resources
Land Quality Bureau
6200 Park Avenue, Suite 200
Des Moines, IA 50321

For questions concerning this application please contact the Department at (515) 249-1482.

SECTION E. SITE DESIGN PLAN

The proposed compost facility design was prepared by an Iowa-licensed professional engineer in accordance with IAC 567-105 Organic Materials Composting Facilities.

The proposed site currently consists of an existing beef cattle open feedlot operation. The site is located in a rural setting away from the nearest thoroughfare, and it appears suitable for the proposed operation.

DESIGN CALCULATIONS

The facility design was completed by ProAg Engineering in coordination with Mr. Sandquist and Mr. Matt Barry. The facility will be operated in accordance with the best management practices outlined in the references included. The proposed site has a one-time maximum capacity greater than the requested annual throughput in order for the business to become established and become fully operational. The operation will maintain records to demonstrate compliance with the requested annual throughput of 8,880.625 tons of solid waste feedstocks per year.

FEEDSTOCKS

- Waste feeds and grain, Cargill (Blair, NE)
- Feedlot manure, Harrison County feedlots
- Yard Waste, Harrison County
- Bone Residue, Gelita (Sioux City, IA)

The facility was designed to receive feedstock that is weighed at the scale immediately upon entry. The feedstock will be mixed with a bulking agent on a concrete mixing pad. In the event of liquid, semi-solid, or slurry, the feedstock will be delivered in a tanker. A bed of carbon stock will be laid in the designated liquid receiving area prior to the feedstock being emptied from the tanker. The designated area is contained. All product, including liquid feedstock, will be thoroughly mixed withing 24-hours of arriving on site.

The active compost will be divided between as a series of windrows and covered static piles. The windrows will be approximately fourteen feet wide by seven feet tall. The windrows will be placed to allow for adequate site drainage and maintain site traffic patterns. The static piles will be placed under hoop-style roofs located at the north end of the site. The covered compost piles will allow for more control over the moisture level in the pile.

Some carbon stock and bulking agent will also be stored on site. The primary bulking agent will be woodchips and sawdust, and corn stalk bales are also available. Enough carbon stock will be maintained on site for approximately thirty days of feedstock.

CARBON STOCK

- Wood chips, Harrison County
- Corn Stalks, Abe Sandquist

Finished compost will be moved to a curing pile within the contained drainage area. The product will stabilize, mature and be screened, as necessary, prior to export off the facility. All of the bulking agent on site, curing product, and active compost windrows will remain in the contained drainage area so that any potential runoff is contained in the stormwater runoff pond.

STORMWATER RUNOFF

The proposed compost site will be fully contained, and the site will not discharge.

- Will store at a minimum the 25-year, 24-hour rainfall
- Basin will have 1 foot of freeboard from the top of dike to maximum liquid elevation

- Runoff curve number (CN) = 100 for direct precipitation on basin
- Runoff curve number (CN) = 98 for paved lot areas, roofs, driveways
- Runoff curve number (CN) = 90 for clay pads
- 25-year, 24-hour rainfall = 5.36 inches
  - Runoff CN_{100} = 5.36 inches
  - Runoff CN_{98} = 5.08 inches
  - Runoff CN_{90} = 4.23 inches
- Drainage Area 1 = 10.34 acres
  - Area CN_{100} = 0.98 acres
  - Area CN_{98} = 6.04 acres
  - Area CN_{90} = 3.32 acres

- Direct Precipitation from the 25yr, 24hr event on CN_{100} = 0.98 Ac x 43,560 ft^2/Ac x 5.36 in ÷ 12 in/ft x 7.48 gal/ ft^3= 142,626 gallons
- Runoff from the 25yr, 24hr event on CN_{98} = 6.04 Ac x 43,560 ft^2/Ac x 5.08 in ÷ 12 in/ft x 7.48 gal/ ft^3= 833,123 gallons
- Direct Precipitation from the 25yr, 24hr event on CN_{90} = 3.32 Ac x 43,560 ft^2/Ac x 4.23 in ÷ 12 in/ft. x 7.48 gal/ ft^3 = 381,316 gallons
- Total runoff to be stored from all sources from the 25yr, 24hr event = 833,123 gal + 142,626 gal + 381,317 gal = 1,357,066 gallons
- Basin Capacity 3,084,729 gallons

SEPARATION DISTANCES

The engineering site plan and mile radius map show the compost location and all required separation distances for the proposed facility. Required separation distances in accordance to IAC 567 Chapter 105 Organic Materials Composting Facilities are:

- Distance to nearest Residence >500-feet
- Distance to nearest Property Line >50-feet
- Distance to the nearest Water Source >00-feet
- Distance to nearest Well >100-feet

HAUL ROUTES

The Facility will receive waste from Cargill located in Blaire, Nebraska, and will also receive product from Gelita, located in Sioux City, Iowa. The facility will also receive product from Woodbine, the nearest municipality, and Harrison County Roads Department. The haul routes to and from the facility are shown on the attached map. The hauling equipment meets with all load limits on the proposed haul route.

EQUIPMENT

The operation will maintain the equipment required to operate the compost facility as long as the Facility permit remains active.

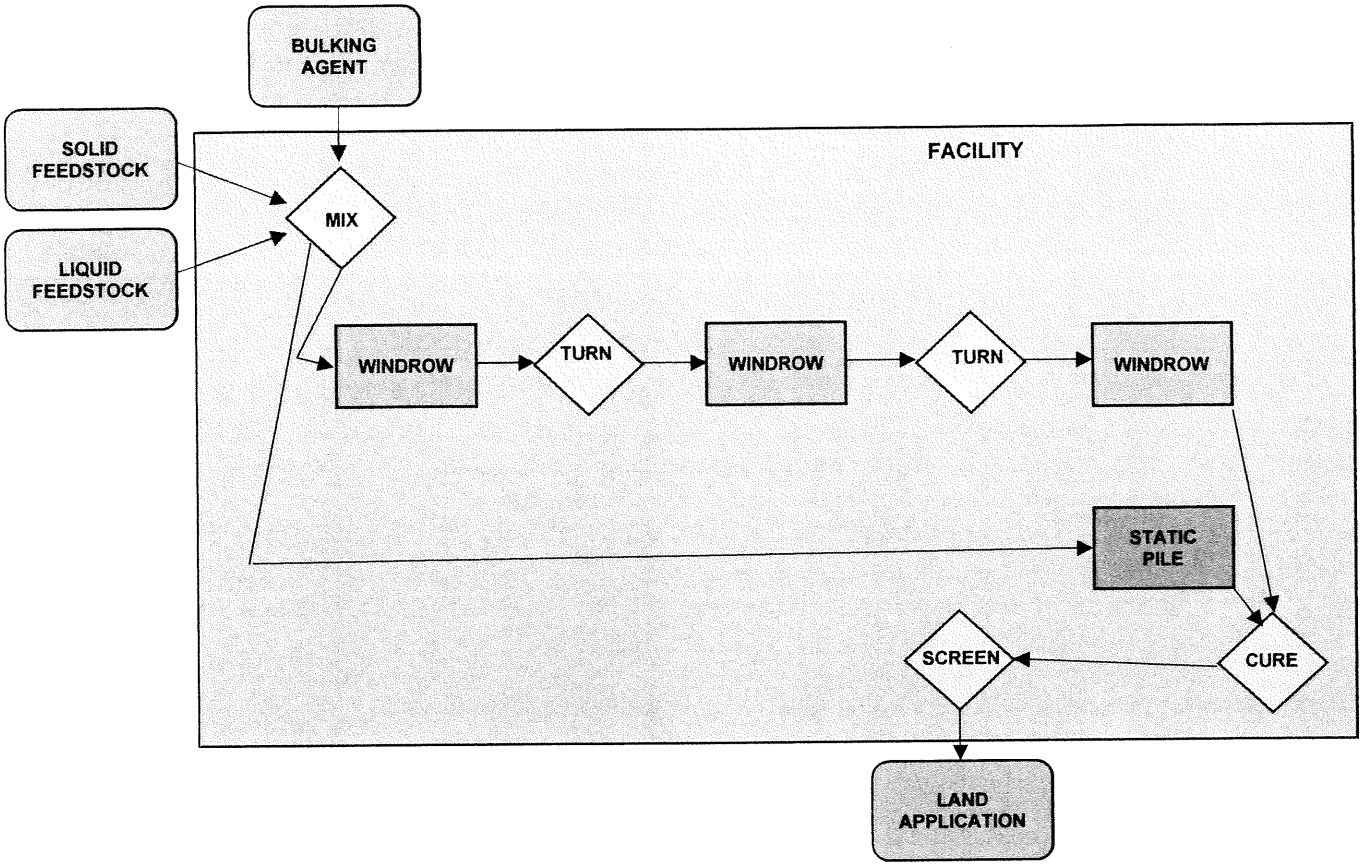
Access to the facility will be restricted with a lockable gate located at the entrance. The gate will be kept locked at all times that an operator is not present at the Facility. The site will not be open to the public.

A pay-loader will remain at the Facility in order to conduct the composting activities on site. During periods of maintenance, a skid loader will be available in order to continue normal operations at the site.

A Brenner 6,000-gallon tanker trailer will be used to haul the feedstock to the site. The [source generator storage] facility has existing storage for periods between regularly scheduled hauling.

A fire extinguisher will be present at the Facility and with the skid loader. The extinguisher shall be maintained and tested according to manufacturer's instructions.

FLOW DIAGRAM



OPERATING SURFACE

All composting operations will occur on a compacted clay surface. The clay pad can support the expected loads of the composting equipment and meet the permeability coefficient that must be less than $2x10^{-7}$ cm/sec (0.00028 feet/day).

The composting facility and storage area for all cured compost is accessible during periods of inclement weather and will be maintained as such as long as the Facility permit remains active.

WATER SUPPLY

The proposed compost facility will obtain its water from multiple sources. The proposed office building will obtain its water from an existing well on the adjacent feedlot site. The compost operation will use stored runoff water from the runoff holding pond to supplement the moisture in the compost. The well meets the required separation distance to the proposed compost facility.

STORM WATER

All composting operations will occur on the clay pad, and all runoff will be contained in the proposed stormwater runoff pond. The available storage volume in the pond 3,084,729-gallons below freeboard.

100-YEAR FLOOD DATA

The FEMA flood hazard map for Harrison County shows the nearest flood hazard area to the proposed site to be an unnamed tributary to the Boyer River located approximately 2,500 feet to the northeast. The flood

hazard appears to extend to approximate USGS elevation 1140. Based on the distance and difference in elevation, it appears the proposed site is above the 100-year flood plain.

The Iowa DNR Siting Atlas does not show the proposed site to be in alluvial soils.

SITE GEOLOGY

The proposed composting site is in the Monona and Napier soil series. The Monona series consists of very deep, well drained soils formed in loess. These soils are on interfluves and side slopes on loess hills and on risers and treads on stream terraces in river valleys. The Napier series consists of very deep, well drained soils on foot slopes, upland drainageways, and alluvial fans. These soils formed in local colluvium and alluvium derived from loess. The existing soils appear suitable for the proposed composting facility.

The Iowa DNR Siting Atlas does not show the proposed site to be in a potential karst area or near a known sinkhole. The site is not located near a designated wetland area.

PROOF OF OWNERSHIP

The property is owned by Natural Fertilizer Products, Inc. A copy of the parcel report is included.

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Date 9Dec25

Justin D. Sprague, P.E.
23486
My license renewal date is December 31, 2025
Pages or sheets covered by this seal:
1-4

Harrison County, IA

Summary

Parcel ID	140001027010000
Alternate ID	
Property Address	
Sec/Twp/Rng	35-80-42
Brief Legal Description	PARCEL B W1/2 SE BOYER-WOOD (Note: Not to be used on legal documents)
Document(s)	AFF: 2025-0814 (2025-04-16) WD: 2025-0628 (2025-03-28) SUR: 2025-0300 (2025-02-12) QCD: 2006-3220 (2006-09-29) REC: 551-4163 (1999-06-21) CON: 535-401
Gross Acres	32.26
Exempt Acres	N/A
Net Acres	32.26
CSR	2098.74
Class	A - Agriculture (Note: This is for tax purposes only. Not to be used for zoning.)
Tax District	BOYER TWP WOODBINE COMM
School District	WOODBINE SCHOOL

Owner

Primary Owner	Secondary Owner	Mailing Address
(Deed Holder) Natural Fertilizer Products, Inc. 414 Walker Street Woodbine, IA 51579		

Land

Lot Area 32.26 Acres ;1,405,246 SF

Sales

Date	Seller	Buyer	Recording	Sale Condition - NUTC	Type	Multi Parcel	Amount
4/16/2025	BARRY, LYNN	NATURAL FERTILIZER PRODUCTS, INC	2025-0814	No consideration	Affidavit		$0.00
3/27/2025	BARRY, LYNN	NATURAL FERTILIZER PRODUCTS, INC	2025-0628	Split of division	Deed		$700,000.00
9/29/2006	BARRY, LYNN & DONNA M	BARRY, LYNN	2006-3220	Quit Claim Deed	Deed		$0.00

⊞ There are other parcels involved in one or more of the above sales:
Recording: 2006-3220 - Parcel: 140001026700000
Recording: 2006-3220 - Parcel: 140001026800000
Recording: 2006-3220 - Parcel: 140001026800001

Valuation

		2025	2024
	Classification	Agriculture	Agriculture
+	Land	$79,710	$62,260
=	**Total Assessed Value**	**$79,710**	**$62,260**

Taxation

		2024 Pay 2025-2026
	Classification	Agriculture
+	Taxable Land Value	$45,984
+	Taxable Building Value	$0
+	Taxable Dwelling Value	$0
=	Gross Taxable Value	$45,984
-	Military Exemption	$0
-	Homestead 65+ Exemption	$0
=	Net Taxable Value	$45,984
x	Levy Rate (per $1000 of value)	26.40309
=	Gross Taxes Due	$1,214.12
-	Ag Land Credit	($21.52)
-	Disabled and Senior Citizens Credit	$0.00
-	Family Farm Credit	($15.33)
-	Homestead Credit	$0.00

		2024 Pay 2025-2026
-	Business Property Credit	$0.00
-	Prepaid Tax	$0.00
=	Net Taxes Due	$1,178.00

Tax History

Year	Due Date	Amount	Paid	Date Paid	Receipt
2024	March 2026	$589	No		6589
	September 2025	$589	Yes	2025-09-18	

Homestead Tax Credit and Exemption

Military Service Tax Exemption Application

Military Service Discharge Records must be filed with the Harrison County Recorder prior to completing this application.
The recorded Book Volume and Page Number is required.

Data Correction

Link to Data Correction Notice and Feedback Form

Sales Questionnaire Form

Would you like to submit a Sales Questionnaire?

No data available for the following modules: Assessment Appeals Process, Residential Dwellings, Commercial Buildings, Agricultural Buildings, Yard Extras, Special Assessments, Tax Sale Certificates, Photos, Sketches.

WINR-CENTER COMPOST
HAUL ROUTES
HARRISON COUNTY, IOWA

ProAg Job No. 21-055 **December 2025**

SOURCE ONE
SOURCE TWO
SOURCE THREE
SOURCE FOUR

ProAg Engineering, Inc.

Nicholaus J. Rowe, P.E.
77402 U.S. Highway 71
P.O. Box 181
Jackson, MN 56143
507-849-7200 – Office
507-841-3269 – Cell
nic@proageng.com

Justin D. Sprague, P.E.
302 Broadway Street
Audubon, IA 50025

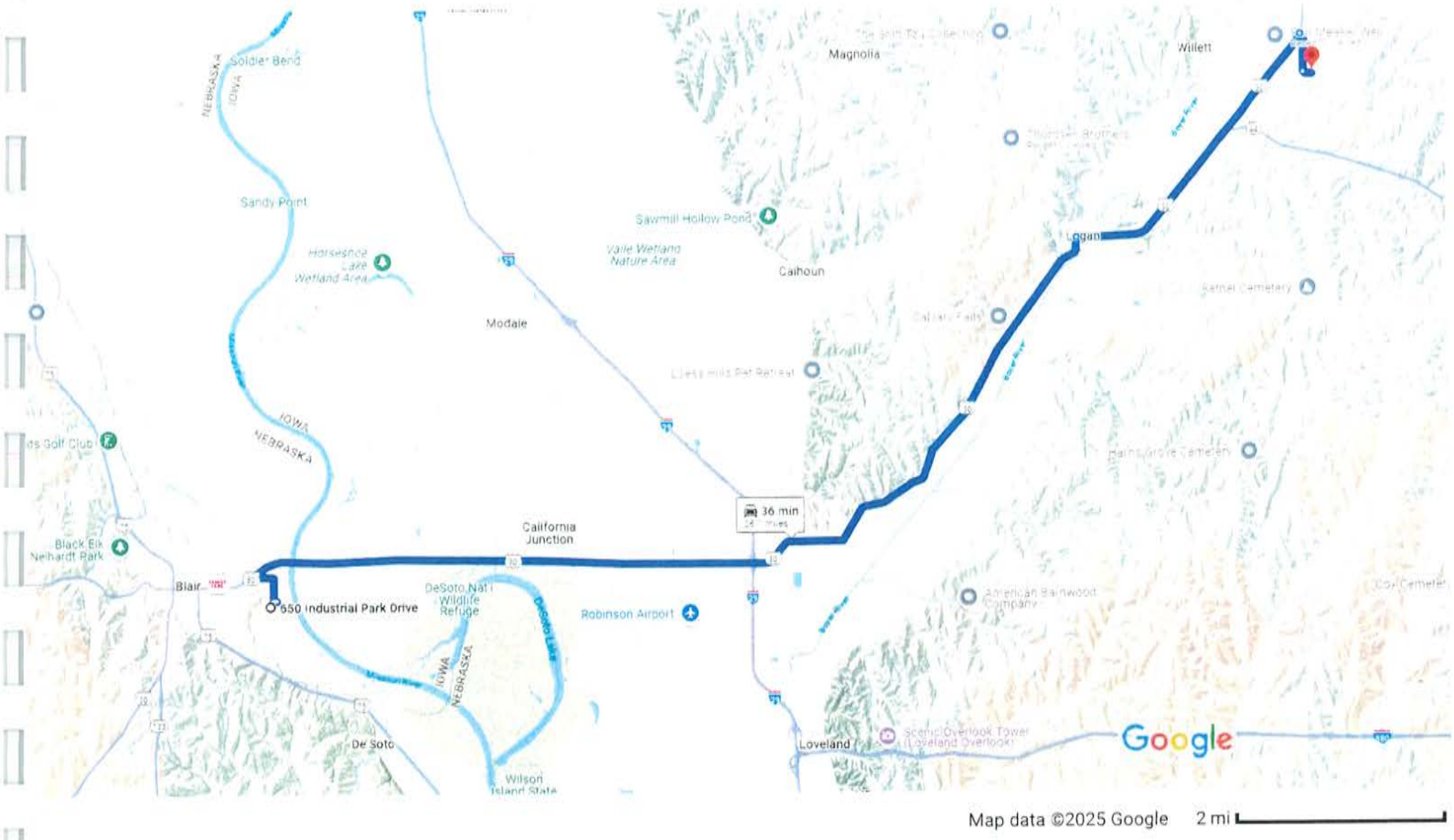
712-563-2168 – Office
507-329-2440 – Cell

Google Maps

650 Industrial Park Dr, Blair, NE 68008 to Boyer Township, Iowa

Drive 28.1 miles, 36 min

Cargill Blaire to WINR-Center Woodbine



650 Industrial Park Dr
Blair, NE 68008

1. Head west toward Industrial Park Dr

312 ft

2. Turn right onto Industrial Park Dr

0.8 mi

3. Turn right onto US-30 E/Washington St
   - Continue to follow US-30 E
   - Entering Iowa

19.9 mi

4. Turn right onto US-30 E/W 7th St
   - Continue to follow US-30 E

6.4 mi

5. Turn right onto Redwood Ave

0.8 mi

6. Turn left onto 220th St
   - Destination will be on the left

0.2 mi

Boyer Township

Google Maps

2445 Port Neal Rd, Sergeant Bluff, IA 51054 to Boyer Township, Iowa

Drive 72.6 miles, 1 hr 12 min

Gelita Souix City Iowa to WINR-Center Woodbine

2445 Port Neal Rd
Sergeant Bluff, IA 51054

Get on I-29 S in Salix from Port Neal Rd and 260th St

5 min (3.3 mi)

1. Head east toward Port Neal Rd

436 ft

2. Turn right onto Port Neal Rd

1.4 mi

3. Turn left onto 260th St

1.4 mi

4. Take the ramp onto I-29 S

0.5 mi

Follow I-29 S to IA-127 E in Harrison County. Take exit 89 from I-29 S

39 min (46.1 mi)

5. Merge onto I-29 S

45.8 mi

6. Take exit 89 for IA-127 toward Mondamin

0.3 mi

Follow IA-127 E and US-30 E to 220th St

29 min (23.2 mi)

7. Sharp left onto IA-127 E

5.6 mi

8. Slight left to stay on IA-127 E

10.3 mi

9. Turn left onto US-30 E/E 7th St

Continue to follow US-30 E

6.3 mi

10. Turn right onto Redwood Ave

0.8 mi

11. Turn left onto 220th St

Destination will be on the left

0.2 mi

Boyer Township

Iowa

Google Maps

Woodbine, Iowa 51579 to 3299-3209 220th St, Woodbine, IA 51579

Drive 3.7 miles, 7 min

City of Woodbine to WINR-Center

Map data ©2025 Google 2000 ft

Woodbine
Iowa 51579

1. Head south on Walker St toward 4th St

381 ft

2. Turn right onto 4th St

302 ft

3. Turn left onto Lincoln Way St

0.2 mi

4. Lincoln Way St turns slightly left and becomes Lincoln Wy

197 ft

5. Turn right onto US-30 W

2.2 mi

6. Turn left onto Redwood Ave

0.8 mi

7. Turn left onto 220th St

Destination will be on the left

0.3 mi

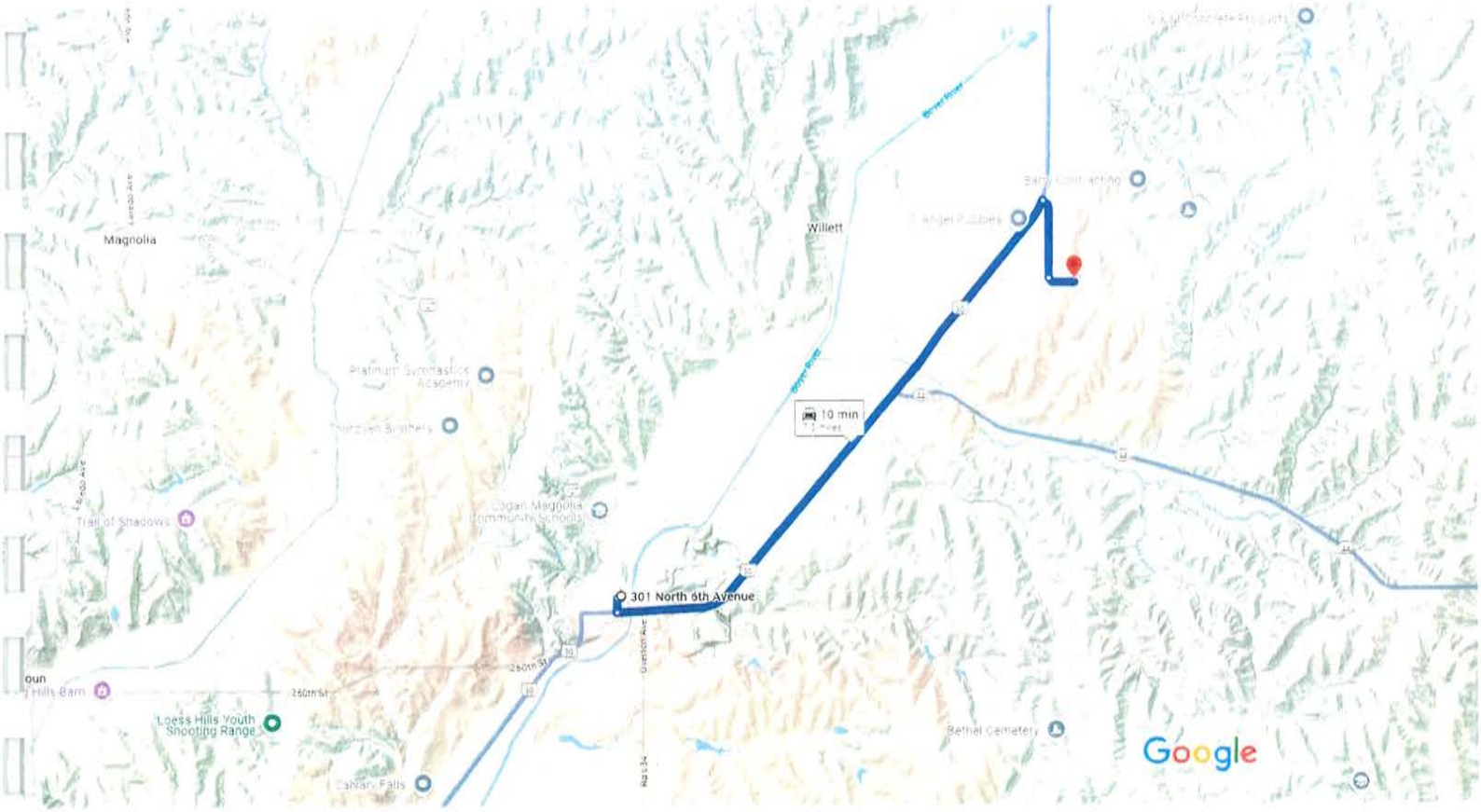
3299-3209 220th St

Google Maps

301 N 6th Ave, Logan, IA 51546 to 3299-3209 220th St, Woodbine, IA 51579

Drive 7.3 miles, 10 min

Harrison County Roads Department to WINR-Center



Map data ©2025 Google 1 mi

301 N 6th Ave
Logan, IA 51546

1. Head south toward E 5th St

46 ft

2. Turn right at the 1st cross street onto E 5th St

200 ft

3. Turn left onto N 5th Ave

0.1 mi

4. Turn left onto US-30 E/E 7th St
   Continue to follow US-30 E

6.1 mi

5. Turn right onto Redwood Ave

0.8 mi

6. Turn left onto 220th St
   Destination will be on the left

0.3 mi

3299-3209 220th St
Woodbine, IA 51579

SECTION F. SITE OPERATION PLAN

Abe Sandquist and WINR-Center Woodbine is proposing a new composting site. The site will receive composting ingredients on a daily basis, mix the ingredients, and windrow the mixed product to begin composting. The products temperature and moisture levels will be independently monitored. The compost will be turned and aerobically agitated to optimize microorganism growth. Once the composting process is complete, the final product will be sold to surrounding producers to be land applied. The proposed site will consist of a truck scale station, office building, concrete mixing pad, storage facility, concrete liquid pit, clay composting pads, composting buildings, and a stormwater runoff basin. The site currently consists of existing row crop and feedlot operations. The site is located in a rural setting away from the nearest municipality, and it appears suitable for the proposed operation.

FEEDSTOCK

The proposed composting site is to receive composting material from three different sources. The first source is Cargill Feedlot in Blair, Nebraska, and will truck waste 28.1 miles to the proposed site. Cargill Feedlot will provide 6 tons of corn stalks, 25 tons of waste feeds, and 25 tons of bedding manure per day. In total, Cargill Feedlot will supply 56 tons of composting material per day. The second source is the city of Woodbine, and waste will be trucked 3.7 miles to the proposed site. The city of Woodbine will provide 2.5 tons of yard waste per day. The third source is Gelita Sioux City in Sioux city, Iowa, and will truck waste 72.6 miles to the propose site. Gelita Sioux City will provide 22.75 tons of bone residue per day. In total, Gelita Sioux city will provide 22.5 tons of composting material to the proposed site per day. The final source is Harrison County Roads Department, Iowa, and will truck waste 7.3 miles to the proposed site. Harrison County will provide 17 tons of wood grinding waste per day. The proposed site will receive 98.25 tons per day or 25,545 tons per year of composting material, and is estimated to produce 12,772.5 tons of finished compost per year.

All waste streams, including semi-solid and liquid wastes, will be accounted for in the site operation's records, and all waste streams will be approved by DNR prior to being admitted to the facility. The semi-solid and liquid waste are expected to be transported in 7,000-gallon tankers, with approximately 1 tanker to be delivered during each day of operations.

RECEIVING AND MIXING

The proposed composting site will receive trucked in composting material from the surrounding region, no waste material will be stored for longer than 24 hours. Upon arrival, materials are weighed at the on-site truck scale station and directed to designated storage or processing areas. Materials are stored in separate piles in the storage facility or on the mixing pad until it can be mixed. The proposed composting site will never store more than the received daily quantities, nor will it be used to store none composting material.

All tankers delivering semi-solid and liquid wastes will discharge the waste in the proposed concrete receiving and mixing area. This structure will have a concrete floor and concrete precast walls to contain the waste, allow mixing, and temporarily hold the waste until lit can be placed in the active compost windrows, piles, or vessels.

Throughout the day, additional carbon stock shall be spread and mixed with the feedstock to achieve a C:N ratio range of 25:1 to 30:1 and a moisture content of 45-65%. Finely processed carbon sources are recommended as the base layer, but coarse sources are recommended to achieve the C:N ratio and decrease the bulk density.

At the end of each day's operations, the liquid receiving and mixing area shall be clear of mixed feedstock. A layer of carbon stock, minimum 12" deep, shall be placed on the concrete floor of the area.

This carbon stock is intended to absorb any remaining free liquid as well as prepare the operation for the following day's deliveries. All feedstock must be mixed by the Facility operator before leaving the site on the day the waste was received or within 24-hours of delivery, whichever comes sooner.

WINDROWS

The mixed feedstock will primarily be spread in windrows fourteen feet wide and seven feet high, size appropriate for the Aeromaster PT170 turner to be used on site. Windrows must allow for drainage between windrows and wheeled traffic throughout the site. Composting material is mixed and shaped into long narrow piles, to begin the composting process, and piles are turned every 3 to 7 days. This turning helps oxygen, moisture, and pile temperature levels. During this time, microbial activity decreases and the material stabilizes. Once fully cured, the compost is screened, stored, or applied to land in accordance with applicable guidelines and quality standards.

STATIC PILES

The hoop buildings will provide a covered area for static pile composting. Each of four proposed buildings is 80' x 180' with a compacted clay floor as a work surface. The piles will be turned as necessary to complete the composting process.

MONITORING

Monitoring activities will be carried out in compliance with IAC 567-105. This refers to the monitoring methods performed while the product is on site, prior to mixing and during active and curing phases. Each pile or windrow will be monitored independently and detailed records maintained for each pile or windrow. Temperature readings will be at a minimum of twice a week to confirm temperature cycles. When the windrow temperature decreases passed the predetermined temperature, it is recommended to turn the windrow to speed the composting process. Windrows The temperature of the compost must be raised to 40°C or higher and maintained for a 5-days. During that 5-day period, the compost must exceed 55°C for one continuous 4-hour period. Each pile or windrow should complete no less than three temperature cycles. Temperature readings should be taken daily or as needed to confirm temperature cycles. When the windrow temperature decreases passed the predetermined temperature, it is recommended to turn the windrow to speed the composting process.

Moisture readings, observed with gravimetric moisture analysis, are taken prior to mixing each compost recipe to ensure proper C:N ratio and aeration efficiency. Moisture readings are taken at the same time as temperature readings to maintain a moisture level between 50-60% during active phase and 40-50% during curing phase. If moisture levels are too high, additional bulking agent or co-compost should be added to the compost when turning. If moisture levels are too low, liquid from the stormwater runoff pond may be added. During winter months, the composting process may slow by 50%, but operations will continue as planned.

Windrows should not be turned early because of the potential for objectionable odors. Aerated and in-vessel piles do not require turning. The operator should take note of wind direction and other weather patterns that could carry odors to any nearby residences.

In house monitoring:

- Moisture Content
- Temperature Monitoring
- Oxygen Levels
- Visual contaminant screening

Lab Testing:

- Heavy Metals

- Nutrients (N-P-K and micronutrients)
- Pathogens (fecal coliform or salmonella)
- Compost Maturity and Stability (e.g., Solvita)
- pH and Electrical Conductivity

SAMPLING

This section refers to sampling methods performed; prior to and upon arrival of each material arriving on site, and after the finished product is completed. Not every load will be tested at the source, However, all waste generators will be required to submit representative samples of their material for laboratory analysis prior to the first delivery. Waste generators will also follow an agreed-upon routine testing frequency, typically monthly or quarterly, depending on the nature and consistency of the waste stream. This testing will include, at a minimum, heavy metals, moisture, nutrient content, and potential contaminants. Due to logistical constraints and cost, not every load will be tested upon arrival. However, a random sampling protocol will be implemented to ensure representative testing and minimize systematic bias. At least 10% of incoming load per waste generator will be sampled and tested monthly. These samples will be retained and analyzed for compliance with site acceptance criteria. Tests unable to be performed on site will take place at Midwest Laboratories in Omaha, NE, or by a certified equivalent laboratory accredited for compost and solid waste analysis. Each incoming waste stream will be tested at the lab for the following parameters:

- Total Heavy Metals (As, Cd, Cr, Cu, Hg, Mo, Ni, Se, Zn)
- pH
- Moisture Content
- Total N-P-K
- C:N Ratio
- Foreign Material Content (plastics, glass, etc.)

Heavy metal testing will be conducted no less than monthly per waste stream or per batch, whichever comes first. Finished compost product sampling will undergo lab testing for:

- Heavy Metals (per EPA 503 biosolids standards)
- Maturity and Stability (e.g., Solvita or equivalent)
- Pathogen Reduction (fecal coliform or salmonella as needed)
- Moisture Content
- pH and Electrical Conductivity
- Nutrient Content (N-P-K and macronutrients)

Product testing will occur at least once per month and will include no less than 3% of completed batches. All results will be documented and retained and made accessible for customers. Sampling will be recorded with a load tracking and batch mapping system, recording the date, source and material location of every incoming load. Materials will be either GPS-tagged or identified by row number and location in the row. Each method will require materials to be assigned a batch ID, and will accurately track the location of which a sample was taken. In the event of material test results returning with inadequate contaminant levels, the incorporated material can be tracked by cross-referencing kept logbooks and mapping record to identify the windrow and section. This batch will be quarantined and either retested, remediated, or disposed of depending on severity and in accordance to regulatory guidelines.

- Description of storage of raw materials (corn stocks/roughage) including quantity and types

- Description of the types, amounts, and sources of wastes to be received and processed daily (wastes). Description must include a description of service area defined in terms of municipalities wherein the sources of material are located.
- Description of the aeration method and the aeration frequency to be used to maintain aerobic conditions in accordance with the BMP
- Description of the methods to minimize and manage odors, dust, vectors, noise, and litter
- Description of the specific procedures to be followed in case of equipment breakdown, maintenance downtime, and fire in equipment, composting material, or buildings to include methods to be used to remove or dispose of accumulated waste and burned or damaged material
- Plans for using or marketing the finished compost
- Methods of disposing of collected storm water
- Method of maintaining storm waste management systems to maintain design volume and to locate and repair leaks in the system

FINISHED PRODUCT DISPOSTION

When each batch of compost is finished and cured, it may be combined with other batches or serve as co-compost for future batches. The final product will be either sold as field amendment or land applied. The cured field-ready compost will be land applied to agricultural production ground or perennial pasture as a soil amendment. The land application records shall be maintained. Finished compost will be stacked with a 65-foot EcoVerse conveyor that will be used to create large windrow style piles 27 feet tall. The facility is designed to store up to six months of active and finished compost to allow for land application twice per year, in the spring and fall. All finished product offered to be sold will be registered with IDALS as a soil conditioner.

PRODUCTION TIMELINE

The proposed sites composting process starts with the receiving and processing phase, all product will be received, mixed, and piled within 24 hours or before the facility operator leaves for the day, whichever comes sooner. The active composting phase follows, also referred to as the production stage. This phase lasts 4 to 8 weeks, depending on the material, compost method, and weather conditions. Following active composting, the material enters a curing phase, which typically lasts another 4 to 8 weeks depending on the weather conditions. Once fully cured, the finished product will be sold, and moved offsite to be land applied. Altogether, the full composting process—from receiving to final storage—usually takes 8 to 12 weeks. WINR-Center will aim to complete this process on average in 8 weeks, and complete 6 turns per year.

LAND APPLICATION

When each batch of compost is finished and cured, it may be combined with other batches or serve as co-compost for future batches. The cured field-ready compost will be land applied to agricultural production ground or perennial pasture as a soil amendment. The land application records shall be maintained. The facility is designed to store up to six months of active and finished compost to allow for land application twice per year, in the spring and fall.

RECORDKEEPING

Recordkeeping requirements remain unchanged, and the Facility will complete the Annual Composting Facility Report, DNR Form 542-8014.

All records will be kept onsite for a minimum of three years and made available to the IDNR upon request.

A qualified site operator will be responsible for conducting daily temperature and moisture monitoring of compost piles, performing weekly inspections of stormwater management systems, and carrying out

monthly maintenance checks on equipment and composting pads. All findings, operational issues, and corrective actions will be documented in site logs

SCHEDULED MAINTENANCE

This portion of the manual will provide guidance to the owner or employees as to what areas of the composting site need regularly scheduled inspection and maintenance. Maintenance will be performed in accordance with IAC 567-105 and stormwater pollution prevention best practices.

1. DAILY

Area	Activity
Mixing Pad & Composting Pads	Remove excess material/debris, inspect for cracks or ponding water.
Composting Buildings	Check temperature, inspect for odors, pests, or excess moisture.
Runoff Pond	Visual inspection for water levels, signs of blockage or overflow.
Concrete Liquid Pit	Check liquid levels, look for clogging or overflow; pump if necessary.

2. WEEKLY

Area	Activity
Composting Process	Log temperature and moisture data for regulatory compliance. Adjust windrow or aeration accordingly.
General Site	Trash/litter removal, ensure access roads are passable.
Runoff Pond	Check inlets/outlets for sediment, vegetation encroachment.
Truck Scale Station	Inspect for mud buildup, clean sensors, verify scale function.

3. MONTHLY

Area	Activity
Concrete Surfaces	Inspect for damage and settling; schedule repairs if needed.
Clay Composting Pads	Look for rutting, ponding, or erosion; touch up with clay as needed.
Compost Storage Facility	Ensure dry, odor-free storage. Rotate and inspect finished product.
Office & Truck Scale	Calibrate scale, check utility systems, pest control.

4. SEMI ANNUALLY

Area	Activity
Stormwater Pond	Sediment depth check. Inspect embankments and emergency spillway.
Grading/Drainage Systems	Visually inspect grade and routes, regrade and level if drainage patterns are shifting. Clean out ditches or swales.
Liquid Pit	Full clean-out, check liners or sealing; verify freeboard and structure integrity.
Safety Systems	Inspect fire extinguishers per manufactures protocol.

5. AFTER SIGNIFICANT RAINFALL

Area	Activity
All Composting Areas	Check for ponding, erosion, or washout. Regrade or patch surfaces.
Stormwater Pond	Ensure it is not overtopping; verify outlet is flowing properly.
Leachate & Runoff Controls	Inspect sumps, trenches, berms for overflow or structural

Area	Activity
	failure. Pump if needed.
Pads and Buildings	Look for roof leaks, ponding water near footings, or silt buildup.
Access Roads	Check for washouts, potholes, or sediment tracking onto public roads.

NUISANCE CONTROL

To minimize odors, vectors, and dust, the facility will maintain aerobic conditions through proper aeration and feedstock blending. Materials with high nitrogen content (bone residue, waste feeds, and bedding manure) are to be promptly incorporated or covered. The proposed site will include buffer zones, a runoff pond, and concrete and clay pads to help contain and manage odors and runoff. Dust control is implemented through surface watering when needed. Fencing and general housekeeping will keep litter off the site. Heavy equipment operations are restricted to standard hours to limit noise disturbances.

EMERGENCY PROCEDURES

In the event of equipment failure, fire, or downtime, the facility follows a written contingency plan. On-site fire extinguishers are available near composting buildings and operating equipment. Materials yet to be processed may be temporarily stored on the mixing pad or within designated containment areas. Burned or damaged materials are removed, isolated, or disposed of based on regulatory guidance. Temporary storage of unprocessed feedstocks is limited to maintain site capacity and prevent pile overheating or anaerobic conditions. All emergency contact information and procedures are written in the emergency response plan.

SECTION H. SITE CLOSURE PLAN

The WINR-Compost (Facility) receives the Cargill Blair Feedlot waste located in Blair, Nebraska, and the Gelita Sioux City waste located in Sioux City, Iowa under agreement. The agreement may be terminated by either party, but at least ninety (90) calendar days must be given prior to the proposed termination date. Once the notice of termination is made, the Facility will petition IDNR for a modification to the permit to include alternate sources for feedstock or decide to close the operation

In the event of a closure, proper notice shall be given to Harrison County and The City of Woodbine to terminate supply of bulking agents, such as wood grinding waste and yard waste.

When the decision is made to close the operation, the facility shall submit and updated closure plan, including a schedule for closure to the IDNR at least sixty (60) calendar days prior to the proposed termination date.

Unless an alternative schedule is approved by the IDNR, all waste and unfinished and finished compost shall be removed from the premises within six (6) months of the facility easing operation.

Upon closure, the Facility will:

a. The facility shall compost all remaining feedstock, to include curing. All organic material shall be land applied. Bulking agent and any other organic material shall be properly disposed. Any other solid waste or litter shall be removed from the premises.
b. Lock all doors, gates, entrances, and exits.
c. Report the completion of these activities to the local political jurisdiction, the department, and the department field office servicing the composting facility.

SECTION G. EMERGENCY RESPONSE & REMEDIAL ACTION PLAN

The WINR-Compost facility is located in the SE 1/4, Section 35, T-80-N, R-42-W, Harrison County, approximately three miles south of Woodbine, Iowa.

Facility Emergency Team Leader
Gabriel Pape, phone 712-647-2810

The following protocol will be used for any causes such as fire, storms or extended wet periods, equipment failure, or accidents.

1. Assess the extent of the emergency and determine the amount of help needed.
   - For serious injury or fire requiring additional aid, contact emergency services immediately (911). Then notify the Facility's emergency team leader.
   - For spills, minor injuries, or small fires not requiring additional aid, the Facility's emergency team leader.
2. The following information will be given to the Facility's emergency team leader:
   - Your name
   - Site identification
   - Description of the emergency
     i. Employee injury
     ii. Fire: compost, equipment, or other
     iii. Spill: feedstock waste, unfinished compost, stormwater runoff, or other
   - Has any waste stream or runoff reached waters of the State?
   - Is there any obvious damage?
   - What is currently in progress to contain the situation?

INJURY

1. If any employee is injured, medical personnel (Dial 911) will be notified as quickly as possible. Harrison County Sheriff (712-600-9774), or the State Patrol-District 4 office (712-263-4621) will be notified if appropriate.

FIRE

2. If a fire occurs on the Facility, dial 911 as quickly as possible. Woodbine Fire Department (712-647-2550), Harrison County Sheriff (712-600-9774), or the State Patrol-District 4 office (712-263-4621) will be notified if appropriate.

SPILL

1. Available equipment/supplies for responding to a spill emergency:
   - Barry Contracting 712-592-0309
   - Thordsen Brothers (Excavating) 402-547-9436
   - Ron Meeker Well Co. (Pumping Service) 712-647-2262
2. The Iowa DNR (phone 515-281-8694) will be notified of a discharge or spill within 24 hours of the event, and a written report to the Department within seven days of the discharge or spill.
3. If a spill should occur on a state or county roadway, the spill will be contained so it does not cause an accident then the Iowa Department of Transportation will be notified if on a state highway ((515) 239-1635), or if a spill should occur on a county road, Harrison County Engineer ((712) 644-3140) will be notified.

SECTION I. PROOF OF FINANCIAL ASSURANCE AND CLOSURE COST ESTIMATE

The WINR-Compost facility will receive more than than 5,000-tons of feedstock annually, and therefore Proof of Financial Assurance and Closure Cost Estimate is required in accordance with IAC 567-105.14.

CLOSURE COST ESTIMATE

The Closure cost estimate is prepared in the event of emergency closure of the proposed composting facility.

Transportation costs, which include the cost to load the material, and total tip fees to properly dispose of the maximum tonnage of received materials that could be managed and stockpiled by the compost facility. Also included shall be the costs of properly removing any wastewater held at the facility,

The total cost to properly dispose of any preprocessed and postprocessed stockpiled materials that may remain at the facility within 30-days of permit suspension, termination, revocation, or expiration is estimated at $599,146.

Total product on site	8,880 ton
Active compost	5,298 ton
Finished compost	3,582 ton
Solids disposal	**$398,870**
Loading	$22,200
800 ton per day	
$250 per hour	
11.1 days	
Transport	$13,640
$0.25 per ton-mile	
Distance to landfill 6.2 miles	
Tipping Fees	$363,030
$20/ton finished product	
$55/ton active compost and feedstock	
Stormwater Runoff Liquid Disposal	**$182,825**
Loading	$10,300
Runoff pond volume 3,084729 gals	
Pumping at 500-gpm for $100 per hour	
Transport	$154,500
$300 per 6,000-gal tanker	
Tipping Fees	$18,025
$35 per 6,000-gal tanker	
Administrative/Managerial fee	**$17,451**
3% project cost	$17,451
Total estimate	**$599,146**

Proof of compliance. Proof of the establishment of the financial assurance instrument and compliance with IDNR rules will be submitted to the department within 30-days of the close of the first fiscal year. The submittal shall include a current closure cost estimate. Proof of compliance shall also be submitted with each permit renewal.

LETTER OF CREDIT

A copy of the letter of credit is included with the permit application for the amount as described above. A copy of the letter of credit will also be maintained with the facility's official files. The issuing institution is an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, is included with the letter of credit submitted to the department.

The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements. If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties.

References

Iowa Administrative Code 567.105 Organic Materials Composting Facilities

Iowa State University Extension and Outreach
Field Tips for Successful Composting

Iowa Department of Natural Resources Form 542-0364
Iowa DNR Solid Waste Composting Inspection Form

United States Department of Agriculture (USDA)
Part 637 National Engineering Handbook, Chapter 2, Composting, February 2000.
(copy not included)

CHAPTER 105
ORGANIC MATERIALS COMPOSTING FACILITIES

567—105.1(455B,455D) General. This chapter shall apply to the composting of solid and yard wastes. Composting facilities may include vermicomposting, turned windrows, aerated static piles, aerated in-vessel systems, or other methods approved by the department. Composting facilities existing as of June 19, 2002, must comply with the requirements of this chapter within two years or by the permit renewal date, whichever is later.

105.1(1) Definitions. For the purposes of this chapter, the following definitions apply:

"Agricultural waste" means organic materials normally discarded during the production of plants and animals from agronomic, horticultural or silvicultural operations. "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.

"Best management practices" means the practices described in the most recent version of the Compost Facility Operating Guide published by the United States Composting Council or other best management practices as approved by the department.

"Bulking agent" means a material that contributes structure and porosity, usually a dry, rigid material such as shredded wood or tire chips.

"Compostable" means an organic material that undergoes degradation by biological processes during composting to yield carbon dioxide, water, inorganic compounds and biomass.

"Compostable plastics" means a plastic that undergoes degradation by biological processes at a rate consistent with other known compostable materials and leaves no visually distinguishable or toxic residue. Testing according to ASTM D6400-00 criteria should be used to designate compostable plastics.

"Composting" means the accelerated biological decomposition of organic matter under managed aerobic conditions resulting in a stable, innocuous final product.

"Composting facility" means all related receiving, processing, production, curing, and storage areas and necessary roads, buildings, equipment, litter control devices, pollution control devices, fire control devices, landscaping, gates, personnel and maintenance facilities, sewer and water lines, and process water.

"Compost leachate" means a liquid that has percolated through or drained from compost.

"Compost maturity," according to Test Methods for the Examination of Composting and Compost (TMECC), means an organo-chemical state of compost that indicates the presence or lack of organic phytotoxic chemicals in stable compost. Measurements for maturity are based on the amount of volatile fatty acids present. Mature compost will have fatty acids of no more than 2 mg/g dry weight solids or as specified in the most recent version of TMECC.

"Compost stability," according to TMECC, means a stage in the composting process when microbial activity is diminished with the corresponding decrease of available organic carbon and other energy sources. Stability is measured through respiration. Stable compost will have oxygen uptake rates in the range of 0-3.5 mg O_2/g BVS/hr. or as specified in the most recent version of TMECC.

"Cured compost" means compost that is both stable and mature according to the definitions found in this chapter.

"Curing" means a process in which compost is further monitored to control pathogen regrowth while increasing stability and maturity.

"Finished compost" means cured and, if necessary, screened or refined.

"Household organic waste" means general household compostable items such as food residuals and paper produced on premises.

"Infectious waste" means waste that is infectious, including but not limited to contaminated sharps, cultures, and stocks of infectious agents, blood and blood products, pathological waste, and contaminated animal carcasses from hospitals or research laboratories.

"Municipality" means any city or county in the state.

"Nuisance" means whatever is injurious to health, indecent, or unreasonably offensive to the senses, or an obstruction to the free use of property, so as essentially to unreasonably interfere with the

comfortable enjoyment of life or property, and a civil action by ordinary proceedings may be brought to enjoin and abate the same and to recover damages sustained on account thereof.

"Organic materials" means any material of animal or plant origin.

"Premises" means a geographically contiguous property owned by a generator or noncontiguous property owned by a generator and that is connected by a controlled right-of-way to which the public does not have access. Two or more pieces of property that are geographically contiguous and divided by public or private right-of-way are a single premises.

"Small compost facilities" means facilities meeting the requirements set forth in rule 567—105.5(455B,455D).

"Solid waste composting" means the composting of any organic material with or without yard waste. For the purposes of this chapter, facilities exempt under 567—105.2(455B,455D) are not considered solid waste composting facilities. In addition, facilities in compliance with 567—105.4(455B,455D), 567—105.5(455B,455D) or 567—105.6(455B,455D) are not considered solid waste composting facilities. Only facilities that are required to obtain or have a permit are considered solid waste composting facilities.

"Vector" means a carrier organism that is capable of transmitting a pathogen from one organism to another. Vectors include, but are not limited to, birds, rats and other rodents, and insects.

"Yard waste" means vegetative matter such as grass clippings, leaves, garden waste, brush and trees, and any clean wood waste which is necessary as bulking agent and which is free of coatings and preservatives.

105.1(2) There are three different levels of compost facility regulation:

a. Exempt operations in accordance with 567—105.2(455B,455D).

b. Permit by rule. Yard waste composting facilities are exempt from permitting if operated in conformance with 567—105.3(455B,455D) and 567—105.4(455B,455D). Facilities that compost dead farm animals are exempt from permitting if operated in conformance with 567—105.3(455B,455D) and 567—105.6(455B,455D). Small quantity solid waste compost operations as defined in 567—105.5(455B,455D) are exempt from permitting if operated in conformance with 567—105.3(455B,455D) and 567—105.5(455B,455D).

c. Solid waste composting. Solid waste composting facilities must obtain a permit from the department. Solid waste composting facilities involving municipal sewage sludge shall also operate in conformance with 567—Chapter 67.

105.1(3) Burial of yard waste at a sanitary landfill is prohibited, except in the following circumstances:

a. When the yard waste is collected for disposal as a result of a severe storm and the yard waste originates in an area declared to be a disaster area in a declaration issued by the President of the United States or the governor.

b. When the yard waste is collected for disposal to control, eradicate, or prevent the spread of insect pests, tree and plant diseases, or invasive plant species.

c. When the yard waste is disposed of in a sanitary landfill that operates a methane collection system that produces energy. A methane collection system that burns landfill gas without using the energy for a purpose other than reducing the amount of methane released is not considered to be a system that produces energy.

105.1(4) Each city and county shall, by ordinance, require persons within the city or county to separate yard waste from other solid waste generated.

105.1(5) Yard waste that has been separated at its source from other solid waste may be accepted by a sanitary landfill for the purposes of soil conditioning or composting. Yard waste accepted by a sanitary landfill for the purpose of soil conditioning shall be used only on finished areas of the landfill that have received the final earthen cover, developed areas with intermediate cover, and restoration of soil borrow areas. Burning of yard waste at a sanitary disposal project is prohibited.

105.1(6) Land application of yard waste shall be in conformance with 567—Chapter 121.

[**ARC 2692C**, IAB 8/31/16, effective 10/5/16]

567—105.2(455B,455D) Exemptions. The following projects are exempt from this chapter. This exemption is not a defense to a nuisance action brought pursuant to Iowa Code chapter 657.

105.2(1) Yard waste or household organic waste composted and used on the same premises where it originated.

105.2(2) Composting facilities involving agricultural waste, excluding dead animals, and clean wood waste which is necessary as bulking agent and which is free of coatings and preservatives. Use of any other materials as bulking agent shall require prior approval by the department. If agricultural waste is mixed with other wastes including dead animals for the purpose of composting, then this chapter shall apply unless the other wastes have been preapproved by the department as necessary as bulking agent.

105.2(3) Yard waste, household organic waste, and agricultural waste generated, composted together in any combination and used on the same premises where they originated.

567—105.3(455B,455D) General requirements for all composting facilities not exempt pursuant to 567—105.2(455B,455D). This rule applies to all composting facilities not exempt under 567—105.2(455B,455D). Facilities exempt from permitting that do not operate in accordance with this chapter may as a result be required to obtain a solid waste composting permit. Composting facilities shall also operate in accordance with all applicable city and county ordinance and permitting requirements.

105.3(1) The composting facility shall be 500 feet from any existing inhabited residence, not including the residence of the person owning/operating the compost facility, at the time the permit application was received by the department. Composting must be done outside of wetlands, at least 200 feet from public wells, 100 feet from private wells, 50 feet from property lines, and 100 feet from flowing or intermittent streams, lakes, or ponds. Composting done inside the 100-year flood plain shall be in accordance with all local and department regulations including 567—71.5(455B). Sediment ponds, engineered wetlands or other constructed waterways for the purpose of pollution control are excluded from this requirement.

105.3(2) Composting shall be performed in a manner that minimizes the formation of compost leachate by the facility.

105.3(3) Measures shall be taken to prevent water from running onto the facility from adjacent land and to prevent compost leachate and runoff from leaving the composting facility. Runoff from the composting facility must be properly managed.

105.3(4) Facilities shall be designed, constructed, and maintained so as to minimize ponding of water or liquids. Any ponding that does occur shall be corrected through routine facility maintenance within 48 hours after the termination of the event causing the ponding.

105.3(5) Composting must be done on an all-weather surface of compacted soil, compacted granular aggregates, asphalt, concrete or similar relatively impermeable material that will permit accessibility during periods of inclement weather and prevent contamination of surface water and groundwater.

105.3(6) Solid waste which cannot be composted or which is removed during processing shall be properly disposed of. Infectious waste shall not be accepted for composting at any composting facility unless approved by the department in writing.

105.3(7) Solid waste materials shall be managed through the entire process in accordance with best management practices to minimize conditions such as odors, dust, noise, litter and vectors which may create nuisance conditions or a public health hazard.

105.3(8) Storage of cured or finished compost shall be limited to 18 months. The 18-month period may be extended with prior written approval from the department.

105.3(9) If compost is offered for sale as a soil conditioner or fertilizer, the compost must be registered by the department of agriculture and land stewardship under Iowa Code chapter 200, Fertilizers and Soil Conditioners. Sale shall be in compliance with all applicable federal and state laws and local ordinances and regulations.

105.3(10) Compost shall not be applied to land, sold or given away unless the concentration of human-made inert materials such as glass, metal, and plastic is less than 1.5 percent by dry weight.

Compost shall not be applied to land, sold or given away unless the size of any human-made inert materials is less than 13 mm (0.512 inches).

567—105.4(455B,455D) Specific requirements for yard waste composting facilities. Yard waste composting facility operators are encouraged to be trained, tested, and certified by a department-approved certification program upon approval of such a program by the department.

105.4(1) Before the composting facility commences operation, the department and the field office of the department serving the composting facility's location shall be notified in writing of the following:

a. The location of the composting facility.

b. Legal description of the facility.

c. Landowner's name, telephone number, and mailing address.

d. Responsible party's name, telephone number, and mailing address.

e. Annual capacity of the facility.

f. Method of composting to be employed.

g. Source of the yard waste and any necessary bulking agent. This description must include a description of service area defined in terms of municipalities wherein sources of the material are located.

105.4(2) The facility shall have a permanent sign posted at the entrance specifying:

a. Name of operation.

b. Operating hours.

c. Materials which are accepted or the statement "All materials must have prior approval."

d. Telephone number of 24-hour emergency contact person.

105.4(3) The area of the composting facility must be large enough for the volume of yard waste composted.

105.4(4) Yard waste must be taken out of containers before composting, unless the containers are compostable.

105.4(5) Aerobic conditions shall be maintained in accordance with best management practices.

105.4(6) An annual report for the previous fiscal year beginning July 1 and ending June 30 shall be submitted to the department by July 31 of each year. The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.

These records shall be maintained by the facility for a period of three years for inspection and evaluation by the department.

567—105.5(455B,455D) Small composting facilities receiving off-premises materials. Small composting facilities are exempt from obtaining a solid waste composting permit provided the facility complies with 567—105.3(455B,455D) and 567—105.5(455B,455D).

105.5(1) *Acceptable materials and amounts.* Yard waste and food residuals may be received from off premises at a total rate of two tons or less per week for composting either singly, in combination, or with agricultural waste. Any clean wood waste free of coating and preservatives may be used as a bulking agent. The two tons per week combined weight limit does not apply to bulking agent. However, the amount of bulking agent received must be appropriate for the amount of compostable materials received. Facilities composting over two tons of food residuals and yard waste per week in any combination from off premises must obtain a permit (Form 50A (542-1542A)) and adhere to the solid waste composting requirements stipulated in 567—105.7(455B,455D) through 567—105.14(455B,455D). If only agricultural wastes are collected and composted, this rule does not apply. If only yard wastes are collected and composted, this rule does not apply.

105.5(2) *Notification.* Before the composting facility commences operation, the department and the field office of the department serving the composting facility's location shall be notified in writing of the following:

a. The location of the composting facility.

b. Legal description of the facility.

c. Landowner's name, telephone number, and mailing address.

d. Responsible party's name, telephone number, and mailing address.

e. Annual capacity of the facility.

f. Method of composting to be employed.

g. Source of the feedstock and any necessary bulking agent. This description must include a description of service area defined in terms of municipalities wherein sources of the material are located.

105.5(3) *Signage.* The facility shall have a permanent sign posted at the entrance specifying:

a. Name of operation.

b. Operating hours.

c. Materials which are accepted or the statement "All materials must have prior approval."

d. Telephone number of 24-hour emergency contact person.

105.5(4) *Reporting.* An annual report for the previous fiscal year beginning July 1 and ending June 30 shall be submitted to the department by July 31 of each year. The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.

These records shall be maintained by the facility for a period of three years for evaluation by the department.

567—105.6(455B,455D) Specific requirements for composting of dead farm animals. Operators of dead farm animal composting facilities are encouraged to be trained, tested, and certified by a department-approved certification program upon approval of such a program by the department. A facility that composts dead farm animals is exempt from permitting if the following operating requirements are met and the facility is in compliance with 567—105.3(455B,455D). Businesses or individuals that are neither the owner nor operator of any of the sites where dead farm animals are generated and that want to compost dead farm animals must obtain a permit in accordance with 567—105.8(455B,455D).

105.6(1) Before commencing operation, the operator is encouraged to notify the department field office with jurisdiction over the facility. The department may provide general assistance, such as locating bulking agents and providing advice in regard to siting considerations such as pad location, sizing and design, to facilities notifying the department and requesting assistance.

105.6(2) Farm animals known or suspected to have died from an infectious disease that can be spread by scavengers or insects or that died from a reportable disease shall be disposed of in accordance with the requirements of the Iowa department of agriculture and land stewardship and the department.

105.6(3) Transportation vehicles shall be constructed to prevent the release of mortality contaminated materials under normal operating conditions. The most direct haul route that avoids biosecurity risks shall be utilized.

105.6(4) The composting facility shall be designed to accommodate at least the average annual death loss for all sites using the composting facility. Facility design shall also take into account space requirements for managing raw materials (e.g., additional bedding and bulking agents needed for mortality composting) and finished compost.

105.6(5) Animal mortalities from a catastrophic event, such as a fire or electrical outage, shall not be composted until the department field office is contacted and arrangements are approved for the appropriate treatment or disposal of the animals. The facility shall contact the department field office with jurisdiction over the facility as soon as possible after such a catastrophic event occurs to receive approval of the disposal option.

105.6(6) Dead farm animals shall be incorporated into the composting process within 24 hours of death. An adequate base layer (from 12 to 24 inches thick, depending on the size and number of dead farm animals) with 6 to 12 inches of bulking agent between carcasses and an additional 12 inches of cover material shall be maintained around carcasses at all times to control mortality leachate and odors and to prevent access by scavenging domestic and wild animals.

105.6(7) Dead farm animals shall not be removed from composting until all soft tissue is fully decomposed.

105.6(8) Compost (including bones that have not fully decomposed) shall be applied to cropland in a manner that minimizes the runoff into a water of the state. Application of the compost to lands other than cropland shall require prior approval by the department.

567—105.7(455B,455D) Permit requirements for solid waste composting facilities.

105.7(1) *Permit required.* Solid waste composting facilities shall not be constructed or operated without a permit from the department. As part of the sanitary disposal project permit issuance procedures, these facilities must meet comprehensive planning requirements. Since these facilities serve as alternatives to landfilling, comprehensive planning requirements are minimal and are satisfied through the information provided in the permit application submittal and by compliance with the reporting requirements set forth in 567—105.12(455B,455D). If a solid waste composting facility is formally part of a planning area's integrated waste management system, the operator must participate in that area's planning activities and the facility must be included in all plan submittal documents. The issuance of a permit by the department in no way relieves the applicant of the responsibility of complying with all other local, state, or federal statutes, ordinances, and rules or other requirements applicable to the construction and operation of a solid waste composting facility.

105.7(2) *Construction and operation.* All solid waste composting facilities shall be constructed and operated according to the plans and specifications as approved by the department and the conditions of the permit. The approved plans and specifications shall constitute a term of the permit.

105.7(3) *Transfer of title and permit.* If title to a solid waste composting facility is transferred, then the department shall transfer the permit within 60 days if the department finds that the following requirements have been met:

a. The title transferee has applied in writing to the department within 30 days of the transfer of title to request a transfer of the permit.

b. The permitted facility is in compliance with the rules and conditions of the permit.

105.7(4) *Permit conditions.* Any permit may be issued subject to conditions specified in writing by the department that are necessary to ensure that the sanitary disposal project can be constructed and operated in compliance with Iowa Code chapters 455B and 455D and these rules.

105.7(5) *Effect of revocation.* If a permit held by any public or private agency for a solid waste composting facility is revoked by the director, then no new permit shall be issued to that agency for that sanitary disposal project for a period of one year from the date of revocation. This subrule shall not prohibit the issuance of a permit for the sanitary disposal project to another public or private agency.

105.7(6) *Inspection prior to commencing operation.* The department shall be notified 30 days prior to scheduled completion of a solid waste composting facility and when the construction has been completed. The department shall then complete an inspection of the facility to determine if the sanitary disposal project has been constructed in accordance with the plans and specifications and permit requirements. No solid waste shall be accepted by the facility until it has been inspected and approved by the department.

105.7(7) *Duration and renewal of permits.* Solid waste composting facility permits shall be issued for a period of three years, and are renewable for similar terms, unless otherwise specified pursuant to 105.7(5).

105.7(8) *Request for and approval of permit renewal.* Requests for permit renewals shall be in writing and must be filed at least 90 days before the expiration of the current permit and submitted on a Form 50A to the department. The department may request that additional information be submitted for review in order to make a permit renewal decision. Comprehensive plan update requirements are satisfied through the information provided in the permit renewal application submittal and by compliance with the reporting requirements set forth in 567—105.12(455B,455D). If a solid waste composting facility is formally part of a planning area's integrated waste management system, the operator must participate in that area's plan update submittals. The department shall renew the permit if, after a review and inspection of the facility and its compliance history, the department finds that the facility is in compliance with its current permit and these rules. If the facility is found not to be in compliance with its current permit and these rules, then the sanitary disposal project shall be brought into compliance, or placed on a compliance schedule approved by the department, before the permit is renewed pursuant to 105.7(5).

105.7(9) *Facility expansion.* Prior to the facility's expanding the amount or types of materials accepted, the facility shall make a request in writing and obtain approval from the department for an amendment to the permit.

105.7(10) *Process change.* Prior to a change in the facility's process, the facility shall make a request in writing and obtain approval from the department for an amendment to the permit.

567—105.8(455B,455D) Permit application requirements for solid waste composting facilities.

105.8(1) A permit application for a new facility shall include a completed Form 50A (542-1542A) and a map or aerial photograph. This map or aerial photograph shall identify:

a. The boundaries of the facility.

b. Wells, streams, creeks, rivers, ponds, sinkholes, and drainage wells.

c. North or other principal compass points.

d. Zoning and land use within one-half mile of the closest portion of the facility.

e. Haul routes to and from the facility with load limits or other restrictions.

f. Homes and buildings within one-half mile of the closest portion of the facility.

g. Section lines or other legal boundaries.

h. Any nearby runway used or planned to be used by turbojet or piston-type aircraft at FAA-certified airports.

105.8(2) Design requirements. Design documents must be prepared by an Iowa-licensed professional engineer (Iowa Code chapter 542B) and must include the following:

a. Equipment to be installed, litter control devices, pollution control devices, fire control devices, landscaping, gates, personnel and maintenance facilities, sewer and water lines, and process water, and dimensions, details, and capacities of the proposed receiving, processing, production, curing, and storage areas.

b. Design calculations justifying the size of the composting areas. The areas for composting must be adequate for the volume of solid waste being composted in accordance with best management practices.

c. Descriptions, specifications, and capacities of proposed equipment to be used in composting.

d. Flow diagram of all operating steps.

e. Composition of the operating surface. Receiving, processing, production, and curing must take place on a constructed, impervious base that can support the load of the equipment used under all weather conditions. The permeability coefficient of the base must be less than 1×10^{-7} cm/sec (0.00028 feet/day). Storage areas for cured/finished compost must permit accessibility during periods of inclement weather.

f. Dimensions, details, and capacities of storm water run-on and runoff management systems of the composting facility. The facility may need a storm water permit.

g. Proof of the applicant's ownership of the site and legal entitlement to use the site as a composting facility.

105.8(3) The operating plan shall provide the following:

a. Method of composting.

b. Duration of composting with a time frame for receiving, processing, production, curing, and storage.

c. Description of storage of raw materials including quantity and types.

d. Description of the types, amounts, and sources of wastes to be received and processed daily. This description must include a description of service area defined in terms of municipalities wherein sources of the material are located.

e. Description of the aeration method and the aeration frequency to be used to maintain aerobic conditions in accordance with best management practices.

f. Description of the methods to minimize and manage odors, dust, vectors, noise and litter.

g. Description of the specific procedures to be followed in case of equipment breakdown, maintenance downtime, and fire in equipment, composting material or buildings to include methods to be used to remove or dispose of accumulated waste and burned or damaged material.

h. Plans for using or marketing the finished compost.

i. Method(s) of disposing of collected storm water.

j. Method(s) of maintaining storm water management systems to maintain design volume and to locate and repair leaks in the system.

k. Description of the monitoring, sampling, and analysis procedures and schedule for testing the composting process and product including sampling frequency, sample size and number, and sample locations. A facility-specific time-temperature monitoring plan for pathogen kill shall be included in the operating plan.

567—105.9(455B,455D) Specific operating requirements for permitted solid waste composting facilities. In addition to the following, all permitted solid waste composting facilities shall comply with 567—105.3(455B,455D).

105.9(1) Access.

a. Access to the facility shall be restricted with a lockable gate at the entrance to the facility.

b. Access to the facility shall be allowed only when an employee, agent or representative of the facility is on duty.

c. Emergency access to the facility shall be provided. Fire lanes shall be maintained to provide access for firefighting equipment as required by the local fire department.

105.9(2) The facility shall have a permanent sign posted at the entrance specifying:

a. Name of operation.

b. Operating hours.

c. Materials which are accepted or the statement "All materials must have prior approval."

d. Telephone number of 24-hour emergency contact person.

105.9(3) All materials received must be incorporated into the composting process within 24 hours of receipt unless storage of these materials is specified in the plan and approved by the department.

105.9(4) Sample collection, preservation, and analysis must be done in a manner which ensures valid and representative results. Facilities should follow the most recent version of the Test Methods for the Examination of Composting and Compost guidelines or other testing procedures as approved by the department. Unless otherwise proposed in the operating plan and authorized in the permit, the permit holder shall test at a minimum:

a. Twice weekly temperature readings of compost piles, batches, and windrows. Compost must be held at a temperature above 55 degrees Celsius (131 degrees Fahrenheit) for an appropriate amount of time, in accordance with best management practices, in order to achieve pathogen reduction.

b. Weekly moisture levels of compost piles, batches, and windrows.

c. Testing of the finished product. Compost shall not be applied to land, sold or given away for household use unless the following requirements are met. If the following requirements are not met, compost must be applied according to 567—Chapter 121.

(1) The density of fecal coliform shall be less than 1000 most probable number (MPN) per gram of total solids (dry weight basis) or the density of Salmonella sp. bacteria in compost shall be less than three MPN per four grams of total solids (dry weight basis).

(2) The concentrations of human-made inert materials comply with 105.3(10), and the concentrations of all metals are less than the following:

Metal	Concentration mg/kg dry weight
Arsenic (As)	41
Cadmium (Cd)	39
Copper (Cu)	1500
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	36
Zinc (Zn)	2800

567—105.10(455B,455D) Operator certification for permitted solid waste composting facilities. All permitted solid waste composting facilities shall meet the following requirement. The person responsible for daily operation of the facility shall be certified by a department-approved program upon approval of such a program by the department. The certification must be renewed every three years.

567—105.11(455B,455D) Record-keeping requirements for solid waste composting facilities. All permitted solid waste composting facilities shall meet the following requirements. The following records shall be maintained by the facility for a period of three years and at the facility at all times and shall be submitted to the department upon request:

1. Analytical results described in 105.9(4). These results shall be recorded on a department-approved reporting form.
2. Types and weight of compostable materials and bulking agent, in tons, accepted at the facility annually.
3. Weight of compost, in tons, removed from the facility annually.
4. A copy of the plan, the permit, annual reports, and the current storm water pollution prevention plan.

567—105.12(455B,455D) Reporting requirements for solid waste composting facilities. An annual report for the previous fiscal year beginning July 1 and ending June 30 shall be submitted to the department by July 31 of each year by all permitted solid waste composting facilities. The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed.

567—105.13(455B,455D) Closure requirements for solid waste composting facilities. All permitted solid waste composting facilities shall meet the following requirements. For each composting facility, a closure plan shall be submitted to the department containing a description of the steps necessary to close the facility. A permit shall not be issued unless the closure plan is approved.

105.13(1) An updated closure plan, including a schedule for closure, shall be submitted to the department at least 60 calendar days prior to the proposed termination date for the facility.

105.13(2) Unless an alternative schedule is approved by the department, within six months of the facility's ceasing operation, all waste and unfinished and finished compost shall be removed from the premises.

105.13(3) Facilities beneficially reusing material in order to comply with 105.13(2) are required to submit in written form all agreements for this reuse. This beneficial reuse shall include names of parties involved, amount of material utilized, and cost per ton. The closure plan will not be approved until these agreements are submitted to and approved by the department. The department shall also be notified of any changes in the agreements.

105.13(4) Upon closure, all permitted solid waste composting facilities shall perform the following activities:

a. Properly dispose of all organic material, solid waste and litter at the premises.

b. Lock all doors, gates, entrances, and exits.

c. Report the completion of these activities to the local political jurisdiction, the department, and the department field office serving the composting facility.

567—105.14(455B,455D) Composting facility financial assurance. Permitted solid waste composting facilities receiving more than 5,000 tons of feedstock annually, bulking agent excluded, must obtain and submit a financial assurance instrument to the department for waste materials received and stockpiled by the facility in accordance with this rule. The financial assurance instrument shall provide monetary funds to properly dispose of any preprocessed and postprocessed stockpiled materials that may remain at a facility due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

105.14(1) *No permit without financial assurance.* The department shall not issue or renew a permit to an owner or operator of a solid waste composting facility until a financial assurance instrument has been submitted to and approved by the department.

105.14(2) *Proof of compliance.* Proof of the establishment of the financial assurance instrument and compliance with this rule, including a current closure cost estimate, shall be submitted to the department within 30 days of the close of the permit holder's first fiscal year that begins after June 19, 2002, or at the time of application for a permit for a new solid waste composting facility. The owner or operator must provide continuous coverage for closure and submit proof of compliance, including an updated closure cost estimate, with each permit renewal thereafter until released from this requirement by the department.

105.14(3) *Use of one financial assurance instrument for multiple permitted activities.* Solid waste composting facilities required to maintain financial assurance pursuant to any other provisions of 567—Chapters 100 to 123 may satisfy the requirements of this rule by the use of one financial assurance instrument if the permit holder ensures that the instrument provides financial assurance for an amount at least equal to the current cost estimates for closure of all sanitary disposal project activities covered.

105.14(4) *Financial assurance amounts required.* The estimate submitted to the department must be certified by an Iowa-licensed professional engineer and must account for at least the following factors determined by the department to be minimal necessary costs for closure:

a. Transportation costs, which include the cost to load the material, and total tip fees to properly dispose of the maximum tonnage of received materials that could be managed and stockpiled by the compost facility. Also included shall be the costs of properly removing any wastewater held at the facility, or

b. Cost of a beneficial reuse option, approved pursuant to subrule 105.13(3), for the total amount of material that could be managed and stockpiled by the composting facility. If the total amount of material will not be beneficially reused, the remainder of the cost shall be calculated according to paragraph 105.14(4)"*a.*" Also included shall be the costs of properly removing any wastewater held at the facility.

c. The costs for maintaining financial assurance pursuant to any other provisions of 567—Chapters 100 to 123, if any, in accordance with subrule 105.14(3).

105.14(5) *Acceptable financial assurance instruments.* The financial assurance instrument shall be established in an amount equal to the cost estimate prepared in accordance with subrule 105.14(4) and shall not be canceled, revoked, disbursed, released, or allowed to terminate without the approval of the department. Financial assurance may be provided by cash in the form of a secured trust fund or local government dedicated fund, surety bond, letter of credit, or corporate or local government guarantee as follows:

a. Secured trust fund. The owner or operator of a solid waste composting facility or entity serving as a guarantor may demonstrate financial assurance for closure by establishing a secured trust fund that conforms to the requirements of this paragraph.

(1) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The fund shall be restricted for the sole purpose of funding closure activities at the facility, and a copy of the trust agreement must be submitted to the department and placed in the facility's official files.

(2) A secured trust fund shall name the department of natural resources as the entity authorized to draw funds from the trust, subject to the provision of proper notification to the trust officer of failure by the permittee to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) Moneys in the fund shall not be assigned for the benefit of creditors with the exception of the state.

(4) Moneys in the fund shall not be used to pay any final judgment against a permit holder arising out of the ownership or operation of the site during its active life or after closure.

(5) The owner or operator or another person authorized to conduct closure activities may request reimbursement from the trustee for closure expenditures as they are incurred. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to

cover the remaining costs of closure and if documentation of the justification for reimbursement has been submitted to the department for prior approval.

(6) If the balance of the trust fund exceeds the current cost estimate for closure at any time, the owner or operator may request withdrawal of the excess funds from the trustee so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

b. Local government dedicated fund. The owner or operator of a publicly owned solid waste composting facility or a local government serving as a guarantor may demonstrate financial assurance for closure by establishing a dedicated fund that conforms to the requirements of this paragraph.

(1) The fund shall be dedicated by state constitutional provision or local government statute, charter, ordinance, resolution or order as a restricted fund to pay for closure costs arising from the operation of the solid waste composting facility.

(2) A copy of the document establishing the dedicated fund must be submitted to the department and placed in the facility's official files.

(3) If the balance of the dedicated fund exceeds the current cost estimate for closure at any time, the owner or operator may withdraw excess funds so long as the withdrawal does not cause the balance to be reduced below the amount of the current cost estimate.

c. Surety bond. A surety bond must be written by a company authorized by the commissioner of insurance to do business in the state. The surety bond shall comply with the following:

(1) The bond shall be in a form approved by the commissioner of insurance and shall be payable to the department of natural resources.

(2) The bond shall be specific to a particular facility for the purpose of properly disposing of any solid waste that may remain on site due to the owner's or operator's failure to properly close the site within 30 days of permit suspension, termination, revocation, or expiration.

(3) The owner or operator shall provide the department with a statement from the surety with each permit application renewal, noting that the bond is paid and current for the permit period for which the owner or operator has applied for renewal.

d. Letter of credit. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(1) The owner or operator must submit to the department a copy of the letter of credit and place a copy in the facility's official files.

(2) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the name and address of the facility and the amount of funds assured, must be included with the letter of credit submitted to the department and placed in the facility's files.

(3) The letter of credit must be irrevocable and must be issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the owner or operator and to the department 90 days in advance of cancellation. When such notice is provided, the owner or operator shall, within 60 days, provide to the department adequate proof of alternative financial assurance, notice of withdrawal of cancellation, or proof of a deposit of a sum equal to the amount of the letter of credit into a secured trust fund that meets the requirements of paragraph 105.14(5)"*a.*" If the owner or operator has not complied with this subrule within the 60-day time period, the issuer of the letter of credit shall deposit a sum equal to the amount of the letter of credit into the secured trust fund established by the owner or operator. The provision of funds by the issuer of the letter of credit shall be considered an issuance of a loan to the owner or operator, and the terms of that loan shall be governed by the letter of credit or subsequent agreement between those parties. The state shall not be considered a party to this credit transaction.

e. Corporate guarantee. An owner or operator may meet the requirements of this rule by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, an owner or operator whose parent corporation is also the parent corporation of the owner or operator, or an owner or operator with a "substantial business relationship" with the owner or operator.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);

2. Establish a fully funded secured trust fund as specified in paragraph 105.14(5)"*a*" in the name of the owner or operator (payment guarantee); or

3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following three conditions:

1. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard & Poor's or Aaa, Aa, A, or Baa as issued by Moody's; or

2. A ratio of less than 1.5 comparing total liabilities to net worth; or

3. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus $10 million, to total liabilities.

(3) The tangible net worth of the guarantor must be greater than the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(4) The guarantor must have assets amounting to at least the sum of the current closure cost estimate and any other environmental obligations, including other financial assurance guarantees.

(5) Record-keeping and reporting requirements. The guarantor must submit the following records to the department and place a copy in the facility's official files:

1. A copy of the written guarantee between the owner or operator and the guarantor.

2. A letter signed by a certified public accountant and based upon a certified audit that:

- Lists all the current cost estimates covered by a guarantee including, but not limited to, cost estimates required by subrule 105.14(4); cost estimates required for municipal solid waste management facilities pursuant to 40 CFR Part 258; cost estimates required for UIC facilities under 40 CFR Part 144, if applicable; cost estimates required for petroleum underground storage tank facilities under 40 CFR Part 280, if applicable; cost estimates required for PCB storage facilities under 40 CFR Part 761, if applicable; and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR Parts 264 and 265, if applicable; and
- Provides evidence demonstrating that the guarantor meets the conditions of subparagraphs 105.14(5)"*e*"(2), (3) and (4).

3. A copy of the independent certified public accountant's unqualified opinion of the guarantor's financial statements for the latest completed fiscal year. In order for the guarantor to be eligible to use the guarantee, the guarantor's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion or disclaimer of opinion shall be cause for disallowance of this instrument. A qualified opinion related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance. If the department does not allow use of the corporate guarantee, the owner or operator must provide alternative financial assurance that meets the requirements of this rule.

f. Local government guarantee. An owner or operator may demonstrate financial assurance for closure by obtaining a written guarantee provided by a local government or jointly provided by the members of an agency established pursuant to Iowa Code chapter 28E.

(1) The terms of the written guarantee must provide that within 30 days of the owner's or operator's failure to perform closure of a facility covered by the guarantee, the guarantor will:

1. Perform closure or pay a third party to perform closure as required (performance guarantee);

2. Establish a fully funded secured trust fund as specified in paragraph 105.14(5)"*a*" in the name of the owner or operator (payment guarantee); or

3. Establish an alternative financial assurance instrument in the name of the owner or operator as required by this rule.

(2) The guarantor must satisfy one of the following requirements:

1. If the guarantor has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, the guarantor must have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard & Poor's, on all such general obligation bonds; or

2. The guarantor must satisfy each of the following financial ratios based on the guarantor's most recent audited annual financial statement: a ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and a ratio of annual debt service to total expenditures less than or equal to 0.20.

(3) The guarantor must prepare its financial statements in conformity with generally accepted accounting principles or other comprehensive basis of accounting and have its financial statements audited by an independent certified public accountant or the office of the auditor of the state of Iowa. The financial statement shall be in the form prescribed by the office of the auditor of the state of Iowa.

(4) A guarantor is not eligible to assure its obligations if:

1. The guarantor is currently in default on any outstanding general obligation bonds; or

2. The guarantor has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard & Poor's; or

3. The guarantor operated at a deficit equal to 5 percent or more of total annual revenue in each of the past two fiscal years; or

4. The guarantor receives an adverse opinion or disclaimer of opinion from the independent certified public accountant or office of the auditor of the state of Iowa auditing its financial statement. A qualified opinion that is related to the demonstration of financial assurance may, at the discretion of the department, be cause for disallowance of this mechanism; or

5. The closure costs to be assured are greater than 43 percent of the guarantor's total annual revenue.

(5) The local government guarantor must include disclosure of the closure costs assured through the guarantee in its next annual audit report prior to the initial receipt of waste at the facility or prior to cancellation of an alternative financial assurance instrument, whichever is later. For the first year the guarantee is used to assure costs at a particular facility, the reference may instead be placed in the guarantor's official files until issuance of the next available annual audit report if timing does not permit the reference to be incorporated into the most recently issued annual audit report or budget. For closure costs, conformance with Governmental Accounting Standards Board Statement 18 ensures compliance with this public notice component.

(6) The local government owner or operator must submit to the department the following items:

1. A copy of the written guarantee between the owner or operator and the local government serving as guarantor for the closure costs at the facility.

2. A copy of the guarantor's most recent annual financial audit report indicating compliance with the financial ratios required by numbered paragraph 105.14(5)"*f*"(2)"2," if applicable, and the requirements of subparagraphs 105.14(5)"*f*"(3) and (4).

3. A letter signed by the local government's chief financial officer that lists all the current cost estimates covered by the guarantor, as described in subrule 105.14(4); and that provides evidence and certifies that the local government meets the conditions of subparagraphs 105.14(5)"*f*"(2), (3), (4) and (5).

105.14(6) *Financial assurance cancellation and permit suspension.*

a. A financial assurance instrument may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance prior to cancellation, as specified in this rule, or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with this rule.

b. A financial assurance instrument shall be continuous in nature until canceled by the financial assurance provider or until the department gives written notification to the owner, operator, and financial assurance provider that the covered site has been properly closed. The financial assurance provider shall give at least 90 days' notice in writing to the owner or operator and the department in the event of any intent to cancel the instrument.

c. Within 60 days of receipt of a written notice of cancellation of financial assurance by the financial assurance provider, the owner or operator must provide the department an alternative financial assurance instrument. If a means of continued financial assurance is not provided within that 60 days, the department shall suspend the permit.

d. The owner or operator shall perform proper closure within 30 days of the permit suspension. For the purpose of this rule, "proper closure" means completion of all items pursuant to rule 567—105.13(455B,455D) and subrule 105.14(4).

e. If the owner or operator does not properly close the site within the 30-day period allowed, the department shall file a claim with the financial assurance instrument provider to collect the amount of funds necessary to properly close the site.

f. An owner or operator who elects to terminate a permitted activity, whose renewal application has been denied, or whose permit has been suspended or revoked for cause must submit within 30 days of the termination of the permit a schedule for completing proper closure of the terminated activity. Closure completion cannot exceed 60 days from the date of termination of the permit.

g. The director may also request payment from any financial assurance provider for the purpose of completing closure when the following circumstances exist:

(1) The owner or operator is more than 15 days late in providing a schedule for closure or for meeting any date in the schedule for closure.

(2) The owner or operator declares an economic inability to comply with this rule, either by sending written notification to the director or through an action such as, but not limited to, filing for bankruptcy.

567—105.15(455B,455D) Variances. A request for a variance must be submitted in writing to the department pursuant to 561—Chapter 10.

These rules are intended to implement Iowa Code sections 455B.304 and 455D.9.

[Filed 9/1/71; amended 2/13/74]
[Filed 2/25/77, Notice 9/22/76—published 3/23/77, effective 4/27/77]
[Filed 5/25/78, Notice 2/22/78—published 6/14/78, effective 7/19/78]
[Filed emergency 6/3/83—published 6/22/83, effective 7/1/83]
[Filed 8/24/84, Notice 5/9/84—published 9/12/84, effective 10/18/84]
[Filed emergency 11/14/86—published 12/3/86, effective 12/3/86]
[Filed 8/31/89, Notice 5/17/89—published 9/20/89, effective 10/25/89]
[Filed 9/28/90, Notice 5/16/90—published 10/17/90, effective 11/21/90]
[Filed 5/28/99, Notice 4/7/99—published 6/16/99, effective 7/21/99]
[Filed 4/26/02, Notice 2/20/02—published 5/15/02, effective 6/19/02]
[Filed 8/27/04, Notice 6/9/04—published 9/15/04, effective 10/20/04]
[Filed 5/17/06, Notice 2/15/06—published 6/7/06, effective 7/12/06]
[Filed 9/6/07, Notice 1/3/07—published 9/26/07, effective 10/31/07]
[Filed ARC 2692C (Notice ARC 2539C, IAB 5/25/16), IAB 8/31/16, effective 10/5/16]

Field Tips for Successful Composting

Decomposition during the composting process requires nitrogen, carbon, oxygen, and moisture for optimal tissue breakdown. Mortality composting is different than regular composting unless you grind the carcass. Whole carcasses contact the carbon source only at the surface of the carcass until it breaks down, at which point the pile shrinks in size.

There is no dead animal odor from an active compost pile, and temperatures are warm enough to cook meat (which happens when temps are over 115°F). The compost material or leachate may have some odor, but there will be no odor from the carcass. It is important to remember that bio-filters work well to reduce odor. Have some extra bio-filter material (corn stalks, hay, wood chips) available to stop any odor by re-covering the pile if needed.

Getting the composting process started quickly is important. Bacteria must have conditions to grow and multiply. Temperature is a big factor. Bacteria will double in growth (creating the compost heat) depending on temperature. For example, at 50°F there will be no action, at 60°F very little action, at 70°F ten times more action, and at 80°F another 10 time more (or 100 times more heat than 60°F). Solve this problem by using hot (actively composting) carbon material to cover the carcass. Composting manure or a composting ground tree branch pile are two examples of hot carbon material.

Pigs are high in moisture, with baby pigs containing 80% moisture and still 53% moisture in market hogs. This equals about 20 gallons of water per market pig. It is important to absorb this water, which is best done by building a good base. The base should be dry and absorbent, while also being aerobic (lets air in from below). Never add water as air circulation is necessary for odor control. Excessive moisture can change to bacteria composition resulting in an odorous problem. Keeping oxygen using bacteria, also know as aerobic bacteria, alive is the goal.

Most important considerations for successful composting

- Select a great location, following all laws: Consider an out of public site, separation from well and surface water, away from a neighbor's home, not in your way, and easily accessible for equipment in all types of weather. Contact the Iowa Department of Natural Resources (DNR) (www.iowadnr.gov/fieldoffice) to obtain the proper variance for transporting or remote composting the mortality livestock.
- Eliminate leachate: At least two feet of dry, absorbent composting material should be used as a base under the carcasses. For example, use dry, ground corn stalks or fresh wood chips, and a combination of large and small particles is best for allowing air flow while absorbing leachate. Particle size should range from .125 inches to 2 inches.
- Reduce odor: Air-loving bacteria (called aerobic bacteria) will reduce odor, feeding air through the base is important and having a bio-filter cover over the carcasses is a second level of odor mitigation. Remember to have some extra bio-filter material available.
- Get the process going quickly: Once the quality base is done, the goal is to surround the carcass with active, hot material such as turkey litter or manure compost. This should be aerobic material (less than the base), but have some water shedding potential.

IOWA STATE UNIVERSITY
Extension and Outreach

AE3549 February 2021

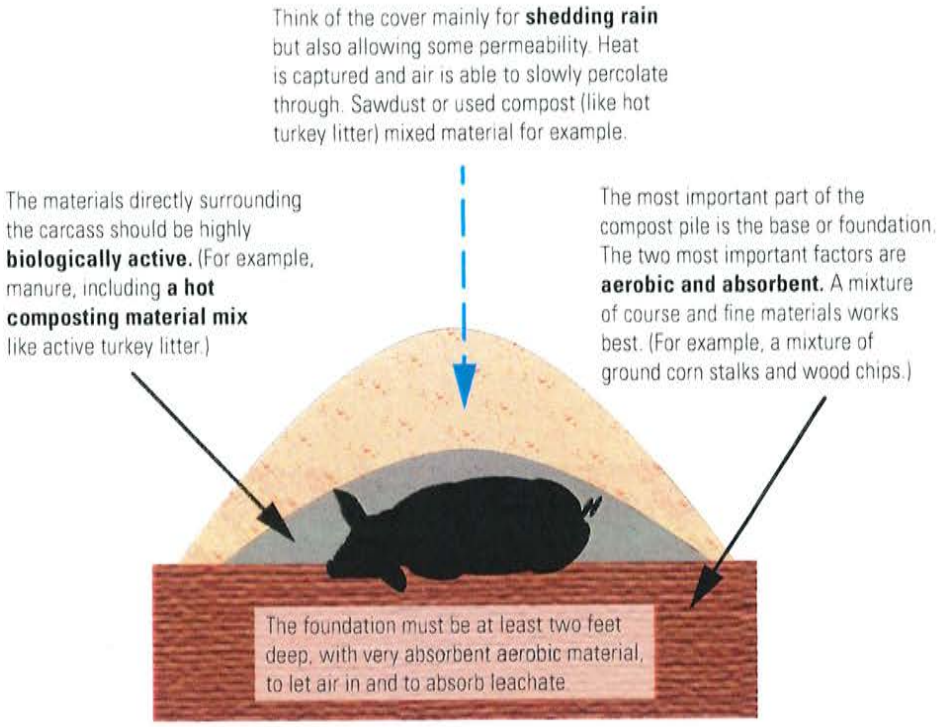


Figure 1. Cross section of composting pile for livestock carcass in one layer.

- Manage: Check the temperature as the material should get hot relatively quickly. Temperatures should be over 115°F within about five days and run from 130-160°F. The pile will drop as carcasses start to deteriorate, so reshape the pile for rain runoff if it settles in the middle. Pile is ready for turning or mixing when the temperature drops to 110°F to complete the process. This 18-inch steel thermometer may be used to manage the process.

OTHER CONSIDERATIONS:

- To get the carbon-to-nitrogen (C:N) ratio close, simply cover the carcass with an equal depth of composting material.
- A pile must be hot to keep the wild animals out, so do it right the first time. A cold pile will be invaded by predators and once that happens, the predator will remember the pile's location for a very long time.
- As the carcass decomposes, the legs tend to poke out of the pile and the pile will settle in the middle. When you see that recover the legs and re-mound the pile to prevent rain from running into the center of the pile and creating anaerobic condition (without air bacteria, which produces a smell that is extremely foul) that destroys the aerobic process.
- There will be bones remnants left, but they will be very brittle and can be crushed to pieces with little effort.
- It is best to lay the carcasses in one level. For multiple layers have at least 12 inches of composting material between layers (Figure 1).
- If it is possible to extend the period between carcasses, then it is possible to reuse a pile. Multiple piles are beneficial, as hot material from one pile can be used to cover the carcasses in the new pile. Sometimes a carcass can be "wiggled" in with a loader bucket into an existing hot pile. If you do this, make sure you re-cover with a bio-filter layer at least 1 to 2 inches.

Written by Kris Kohl, agricultural engineering specialist, and Dave Stender, swine specialist, with Iowa State University Extension and Outreach. Photo by Daniel Novta/ CC BY 2.0

Annual Composting Facility Report

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

County: _____ Permit #: _____

Responsible Official: _____

Facility Name: _____

Address: _____

City, State, Zip: _____

Please make address corrections as necessary

Send completed form to:
Land Quality Bureau
c/o Susan Johnson
502 E 9th St
Des Moines IA 50319-0034

MATERIALS ACCEPTED. Please answer the following questions on materials accepted at the composting facility. If you answer "yes" to any question, please provide tonnage for this reporting period.

Does this facility accept:

Yard Waste	☐ Yes ☐ No	tonnage: _____	***Wood***	☐ Yes ☐ No	tonnage: _____
Animal Manure/Bedding	☐ Yes ☐ No	tonnage: _____	***Animal Mortality***	☐ Yes ☐ No	tonnage: _____
Paper Products	☐ Yes ☐ No	tonnage: _____	***Crop Residue***	☐ Yes ☐ No	tonnage: _____
Sewage Sludge	☐ Yes ☐ No	tonnage: _____	***Industrial Sludge***	☐ Yes ☐ No	tonnage: _____
Municipal Solid Waste	☐ Yes ☐ No	tonnage: _____	***Food Residuals***	☐ Yes ☐ No	tonnage: _____
Other (Specify) _____	☐ Yes ☐ No	tonnage: _____			

What is the source of the material? _____

Total tonnage of organics accepted for composting at the facility tonnage: _____

What is the annual capacity of the facility? (maximum amount that can be composted) Tons/year: _____

FINISHED COMPOST MARKETED 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: _____ Tons/year: _____

Is the finished Compost: (check all that apply)

☐ Sold _____ 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:
Susan Johnson, Project Officer, susan.johnson@dnr.iowa.gov, (515) 725-8317

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* ☐ *Aerated static piles/windrows* ☐ *Turned windrows*

☐ *In-vessel* ☐ *Vermicompost* ☐ *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

SOLID WASTE COMPOSTING FACILITY ONLY. Each composting facility is required by IAC Chapter 105 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: _____

Email: _____ **Telephone Number:** _____ **Fax:** _____

Additional Comments:

_____

_____

_____

_____

_____

_____

Questions? Call or email:

Susan Johnson, Project Officer, susan.johnson@dnr.iowa.gov, (515) 725-8317

IOWA DEPARTMENT OF NATURAL RESOURCES
SOLID WASTE COMPOSTING (COM) INSPECTION FORM

Permit No.: -SDP- - P-COM	**County:**
Facility Name: **Phone Number:**	**Facility Address:**
Responsible Official: **Phone Number:** **Person(s) Present:** 1) 2) 3)	**Mailing Address:**
Date of This Inspection:	**Date of Last Inspection:**

**Be advised your facility may require, due to either SIC code or onsite management practices, an NPDES General Permit #1 (Stormwater permit).*

	IAC 567 Chapter 105.3: Requirements for Composting Facilities *(Not Exempt per Chapter 105.2)*	Yes	No	NA
Non-Exempt Composting Requirements	105.3(1)	Does the composting facility meet the following setback distance requirements: • 500 feet from any existing inhabited residence – not including the residence of the person owning/operating the compost facility at the time the application was received by the department • Facility is outside of a wetland • 200 feet from a public well • 100 feet from a private well • 50 feet from a property line • 100 feet from flowing or intermittent streams, lakes, or ponds	☐	☐	☐
	105.3(2)	Is composting being performed in a manner that minimizes the formation of compost leachate?	☐	☐	☐
	105.3(3)	Are measures being taken to prevent water from running onto the facility and to prevent compost leachate and runoff from leaving the facility?	☐	☐	☐
	105.3(4)	Is the facility maintained so as to minimize ponding of water and is any ponding that does occur being corrected within 48 hours of ponding event?	☐	☐	☐
	105.3(5)	Is composting being done on an all-weather surface that will permit accessibility during periods of inclement weather and prevent contamination of surface and groundwater?	☐	☐	☐
	105.3(6)	Is solid waste that cannot be composted or removed during composting being properly disposed of?	☐	☐	☐
	105.3(7)	Are solid waste materials being managed through the entire process to minimize odors, dust, noise, litter and vectors that may create nuisance conditions or a public health hazard?	☐	☐	☐
	105.3(8)	Is storage of cured or finished compost limited to 18 months unless written approval was granted from the department?	☐	☐	☐
	105.3(9)	Is compost that is offered for sale registered with IDALS?	☐	☐	☐
	105.3(10)	Does the finished compost that is applied to land have human-inert materials such as glass, metal, and plastic in excess of 1.5 percent by dry weight or is larger than 13mm (0.512 inches)?	☐	☐	☐

Comments:

Yard Waste Composting Requirements	IAC 567 Chapter 105.4: Requirements for Yard Waste Composting Facilities	Yes	No	NA
105.4(1)	Was both the department's central and field offices properly notified in writing with the following information: • The location of the composting facility • Legal description of the facility • Landowner's name, telephone number, and mailing address • Responsible party's name, telephone number, and mailing address • Annual capacity of the facility • Method of composting to be employed • Source of the yard waste and any necessary bulking agent. The description must include a description of service area defined in terms of municipalities wherein sources of the material are located	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐
105.4(2)	Does the composting facility have a permanent sign posted at the entrance specifying the following: • Name of operation • Operating hours • Materials which are accepted or the statement "All materials must have prior approval" • Telephone number of 24-hour contact person	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐
105.4(3)	Is the composting facility area large enough for the volume of yard waste composted?	☐	☐	☐
105.4(4)	Is the yard waste being taken out of the collection container before being composted, unless the containers are compostable?	☐	☐	☐
105.4(5)	Are aerobic conditions being maintained in accordance with best management practices?	☐	☐	☐
105.4(6)	Is the following information being reported to the department and maintained on file for a period of three years: • Submission of the department reporting form 542-3276C • All applicable sections of the form completed • Form 542-3276C was submitted by July 31st of each year in operation	☐ ☐ ☐	☐ ☐ ☐	☐

Comments:

Small Facility Requirements	IAC 567 Chapter 105.5: Small Facilities Receiving Off-Premises Materials	Yes	No	NA
105.5(1)	Is the facility accepting yard waste, food residuals, and agricultural waste at a rate less than 2 tons per week? *(Note: If more than two tons per week are accepted or materials not listed above are accepted, a solid waste composting permit will need to be obtained. The two tons per week rate does not apply to any clean wood waste or other bulking agents if the amount received is appropriate for the amount composted at the facility)*	☐	☐	☐

Small Facility Requirements	IAC 567 Chapter 105.5: Small Facilities Receiving Off-Premises Materials (Cont'd)		Yes	No	NA
	105.5(1)	Is the facility accepting yard waste, food residuals, and agricultural waste at a rate less than 2 tons per week? *(Note: If more than two tons per week are accepted or materials not listed above are accepted, a solid waste composting permit will need to be obtained. The two tons per week rate does not apply to any clean wood waste or other bulking agents if the amount received is appropriate for the amount composted at the facility)*	☐	☐	☐
	105.5(2)	Was the department properly notified in writing before operation of the composting facility commenced? Notification should have included the following: • The location of the composting facility • Legal description of the facility • Landowner's name, telephone number, and mailing address • Responsible party's name, telephone number, and mailing address • Annual capacity of the facility • Method of composting to be employed • Source of the feedstock and any necessary bulking agent. The description must include a description of service area defined in terms of municipalities wherein sources of the material are located	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐
	105.5(3)	Is the following information being reported to the department and maintained on file for a period of three years: • Submission of the department reporting form 542-3276C • All applicable sections of the form completed • Form 542-3276C was submitted by July 31st of each year in operation	☐ ☐ ☐	☐ ☐ ☐	☐

Comments:

Animal Mortality Requirements	IAC 567 Chapter 105.6: Animal Mortality Composting Requirements		Yes	No	NA
	105.6(1)	Was the department notified before the composting facility commenced operation? *(Note: Notification is not required and does not constitute a violation)*	☐	☐	☐
	105.6(2)	Were farm animals that were known or suspected to have died from an infectious disease that can be spread by scavengers or insects or that died from a reportable disease disposed of in accordance with the requirements of the Iowa department of agriculture and land stewardship and the department?	☐	☐	☐
	105.6(3)	Were transportation vehicles constructed to prevent the release of mortality contaminated materials under normal operating conditions? In addition, was the most direct haul route that avoids biosecurity risks used?	☐	☐	☐
	105.6(4)	Was the composting facility designed to accommodate at least the average annual death loss for all sites using the composting facility? *(Note: Facility design shall also take into account space requirements for managing raw materials (e.g., additional bedding and bulking agents needed for mortality composting) and finished compost)*	☐	☐	☐
	105.6(5)	In the event of a catastrophic event (such as a fire or electrical outage), were or are there plans for the animal mortalities to be composted *(Note: Animal mortalities must not be composted until the department field office is contacted and arrangements are approved for the appropriate treatment or disposal of the animals. The facility shall contact the department field office with jurisdiction over the facility as soon as possible after such a catastrophic event occurs to receive approval of the disposal option)*	☐	☐	☐

Animal Mortality Requirements	IAC 567 Chapter 105.6: Animal Mortality Composting Requirements (Cont'd)		Yes	No	NA
	105.6(6)	Are dead farm animals being incorporated into the composting process within 24 hours of death? In addition, was an adequate base layer (from 12 to 24 inches thick, depending on the size and number of dead farm animals) with 6 to 12 inches of bulking agent between carcasses and an additional 12 inches of cover material being maintained around carcasses at all times to control mortality leachate, odors and to prevent access by scavenging domestic and wild animals?	☐	☐	☐
	105.6(7)	Is all soft tissue being fully decomposed on the dead farm animals before they are being removed from the composting pile?	☐	☐	☐
	105.6(8)	Is the compost (including bones that have not fully decomposed) being applied to cropland in a manner that minimizes the runoff into a water of the state? *(Note: Application of the compost to lands other than cropland shall require prior approval by the department)*	☐	☐	☐

Comments:

Composting Operating Requirements	IAC 567 Chapter 105.9: Solid Waste Composting Operating Requirements		Yes	No	NA
	105.9(1)"a"	Is access restricted with a lockable gate at the entrance	☐	☐	☐
	105.9(1)"b"	Is access only allowed when an employee, agent, or representative of the facility is on duty?	☐	☐	☐
	105.9(1)"c"	Is emergency access provided and fire lanes maintained as to provide access to firefighting equipment as required by the local fire department?	☐	☐	☐
	105.9(2)	Is a permanent sign posted with name of operation, operating hours, materials accepted, and phone number of 24-hour emergency contact?	☐	☐	☐
	105.9(3)	Are all materials that are accepted incorporated into the composting process within 24 hours of receipt? *(Note: Extra time for storage is allowed for these materials if specified in the plan and approved by the department)*	☐	☐	☐
	105.9(4)	Is the facility, at a minimum, testing the following in accordance with the most recent version of Test Methods for the Examination of Composting and Compost or other testing procedures as approved by the department; • Twice weekly temperature readings of compost piles, batches, and windrows in order to meet "Processes to Further Reduce Pathogens", compost must be held above 55 degrees Celsius for an appropriate amount of time. • Weekly moisture levels of compost piles, batches, and windrows	☐ ☐	☐ ☐	☐
	105.9(4)"c"(1)	Is the compost that is land applied able to meet the following requirements: • Density of fecal coliform is less than 1000 MPN per gram of total solids (dry weight basis) • Density of Salmonella sp. bacteria in compost shall be less than 3 MPN per four grams of total solids (dry weight basis)	☐ ☐	☐ ☐	☐

Composting Operating Requirements	IAC 567 Chapter 105.9: Solid Waste Composting Operating Requirements (Cont'd)		Yes	No	NA
	105.9(4)"c"(2)	Did the testing of finished product meet the following levels? The concentration of the following chemicals shall be less than or equal to the following: **METAL** — **CONCENTRATION mg/kg dry weight** Arsenic (As) 41 Cadmium (Cd) 39 Copper (Cu) 1,500 Lead (Pb) 300 Mercury (Hg) 17 Nickel (Ni) 420 Selenium (Se) 36 Zinc (Zn) 2,800	☐	☐	☐
	105.10	Is the person responsible for daily operation of the facility certified by a department approved program? • Kirkwood Compost Operator Training, or • Midwest Extension Composting School	☐	☐	☐
	105.11	Is the following information being reported to the department and maintained on file for a period of three years; • Testing results reported on form 542-3276C • Types and weight of compostable material and bulking agent, in tons, accepted by the facility annually? • Weight of compost, in tons, removed from the facility annually • Are a copy of the plan, permit, annual reports, and current storm water pollution prevention plan available	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐
	105.12	Was an annual report for the previous fiscal year beginning July 1 and ending June 30 submitted to the department by July 31 of each year by the permitted solid waste composting facility? *(Note: The report shall be submitted using Form 542-3276C, provided by the department, and all applicable sections of the form must be completed)*	☐	☐	☐

Comments:

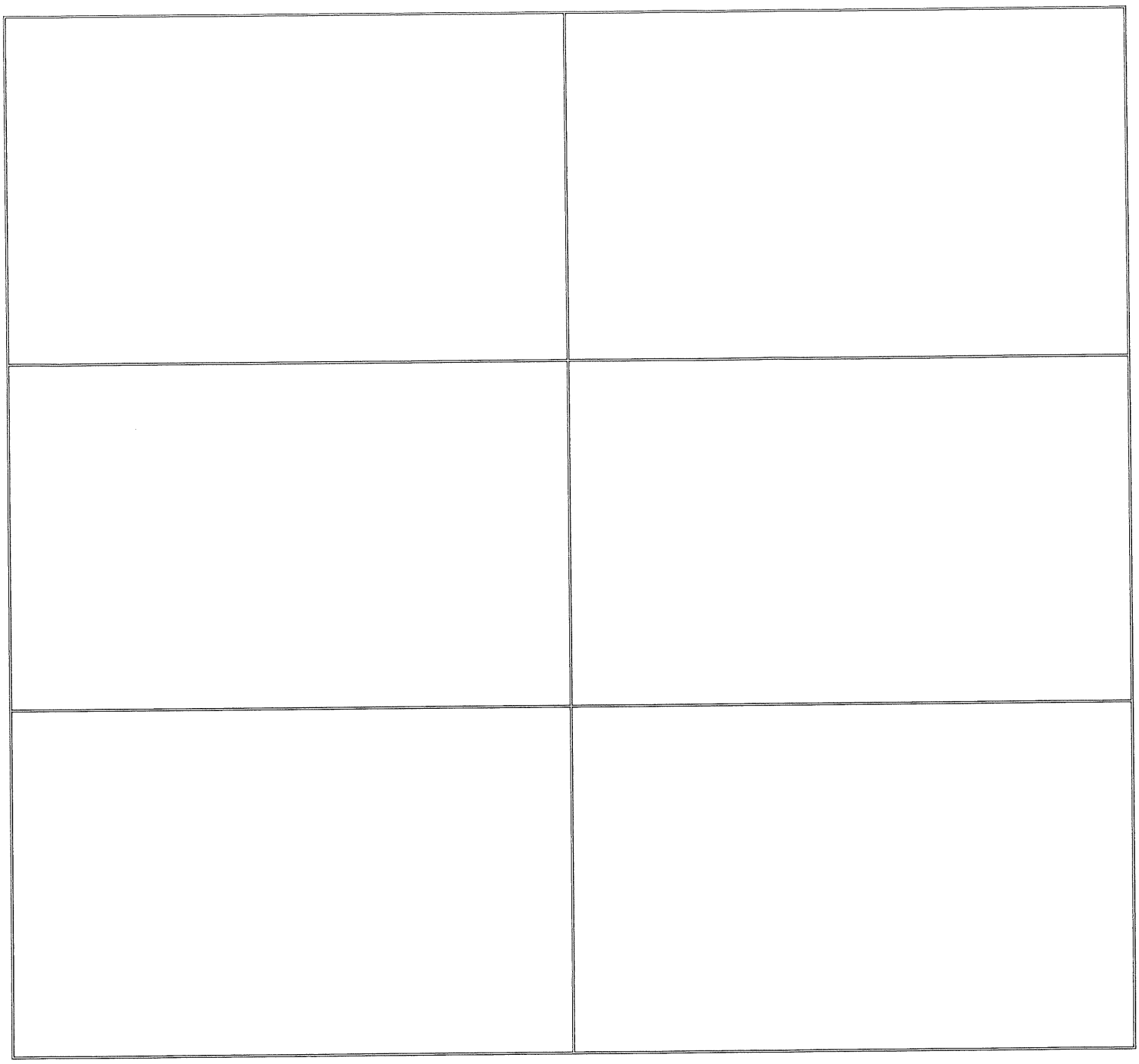
Summary of Requirements:	Compliance Date:
1)	
2)	
3)	
4)	
5)	

Summary of Reminders:
1)
2)
3)
4)
5)

Summary of Recommendations:
1)
2)
3)
4)
5)

Inspector:_____ **Date:_____**	**Reviewer:_____** **Date:_____**

Facility Photographs (if applicable)



References

Iowa Administrative Code 567.105 Organic Materials Composting Facilities

Iowa State University Extension and Outreach
Field Tips for Successful Composting

Iowa Department of Natural Resources Form 542-8014
Iowa DNR Annual Composting Facility Report

Iowa Department of Natural Resources Form 542-0364
Iowa DNR Solid Waste Composting Inspection Form

United States Department of Agriculture (USDA)
Part 637 National Engineering Handbook, Chapter 2, Composting, February 2000.
(copy not included)

TABLE OF CONTENTS

THIS DESIGN OF THE COMPOST FACILITY COMPLIES WITH THE CONSTRUCTION DESIGN STANDARDS OF CHAPTER 105, AS REQUIRED IN 567 IAC.

LICENSED PROFESSIONAL ENGINEER
JUSTIN D. SPRAGUE
23486
IOWA

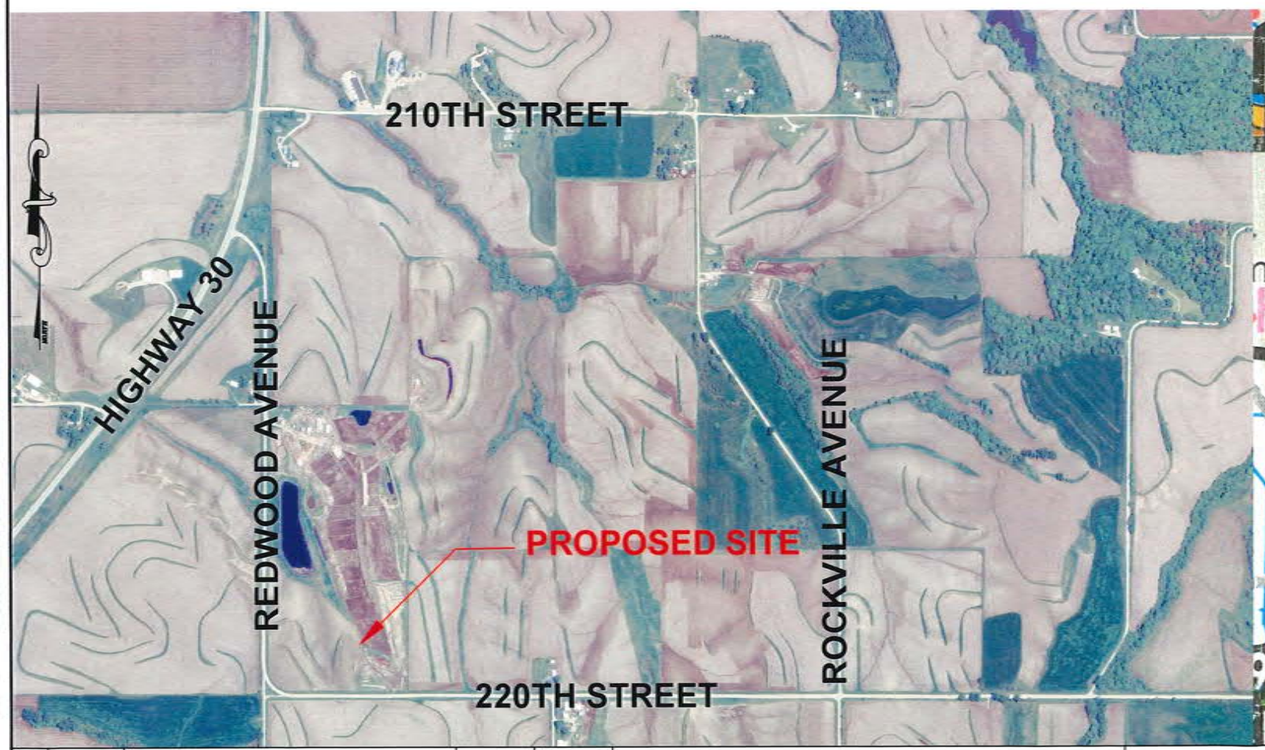
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

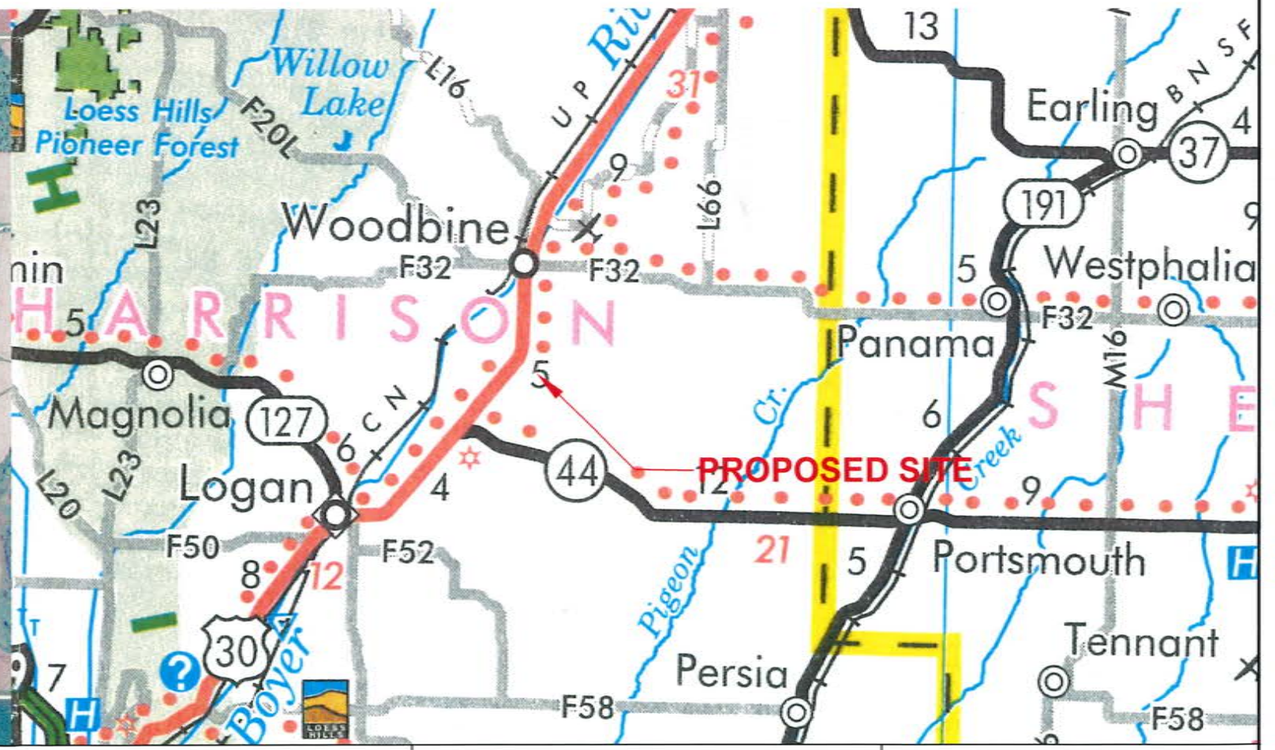
Date 9 Dec 25

Justin D. Sprague, P.E.
23486
My license renewal date is December 31, 2025
Pages or sheets covered by this seal:
SL 1-5

CLIENT REVIEW (to be signed at Preconstruction Meeting):
I have reviewed and approve the design and construction drawings.

Date





REV	DATE	DESCRIPTION	DRN BY	CHK BY
0	12/01/25	ISSUED FOR PERMIT	TMW	JDS

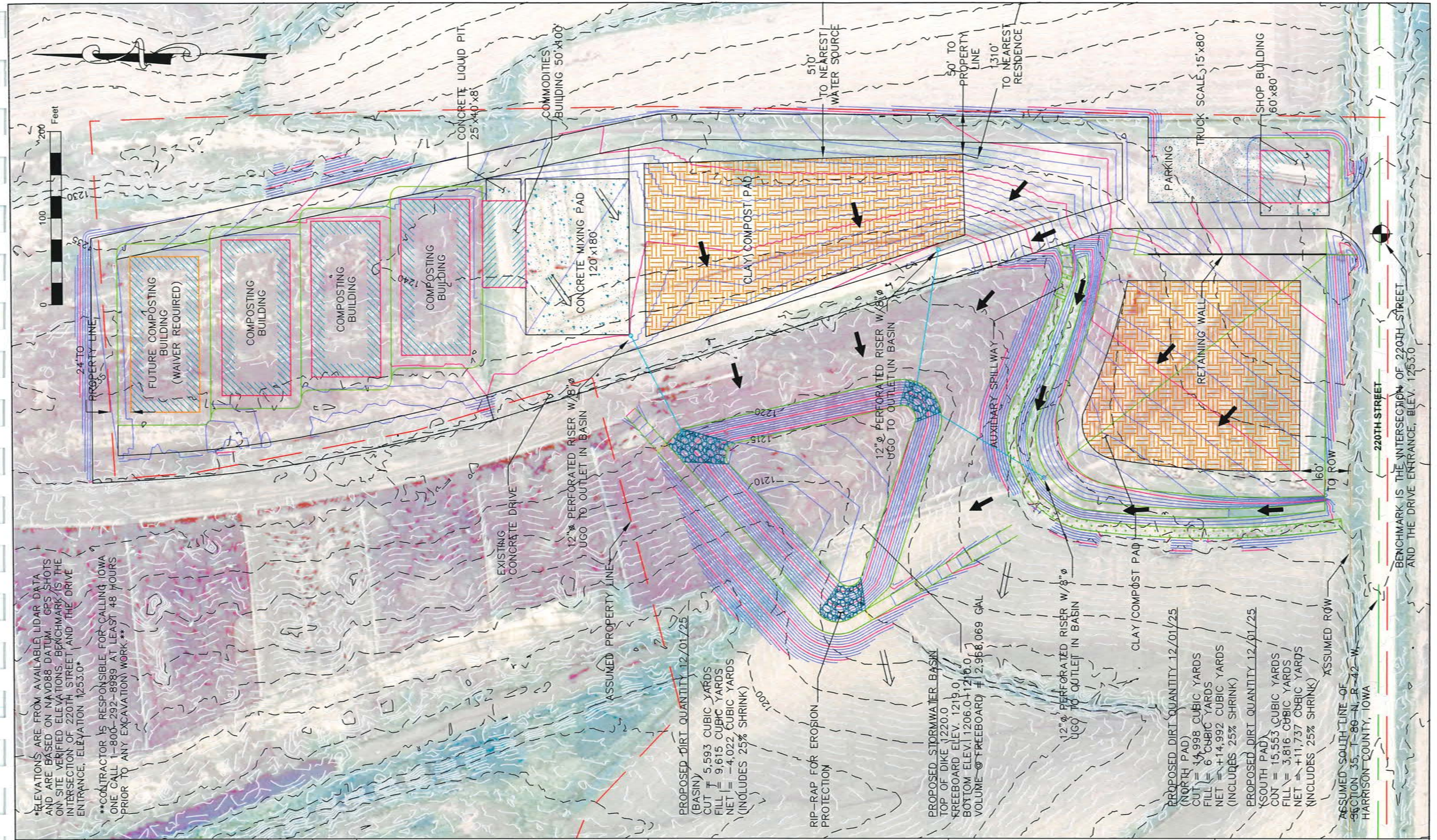
ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849–7200

WINR
220TH STREET
WOODBINE, IOWA 51579

COMPOST FACILITY
SE 1/4, SECTION 35, T–80–N, R–42–W
HARRISON COUNTY, IOWA

COVER SHEET

PROJECT NO.	SHEET NO.
21–055	1 OF 5



REV	DATE	DESCRIPTION	DRN BY	CHK BY
0	12/01/25	ISSUED FOR PERMIT	TMW	JDS

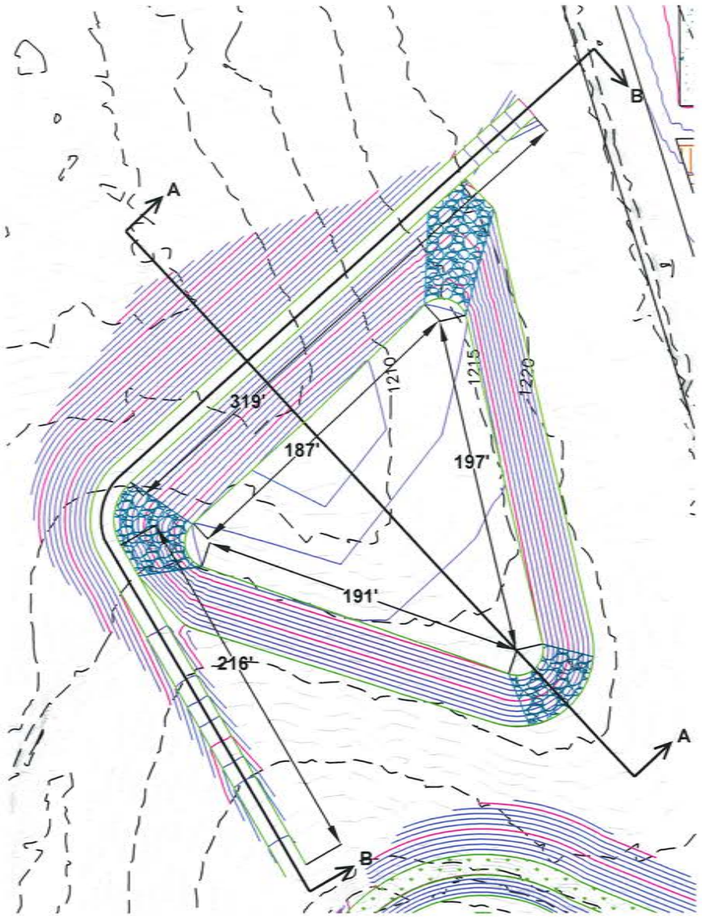
ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200

WINR
220TH STREET
WOODBINE, IOWA 51579

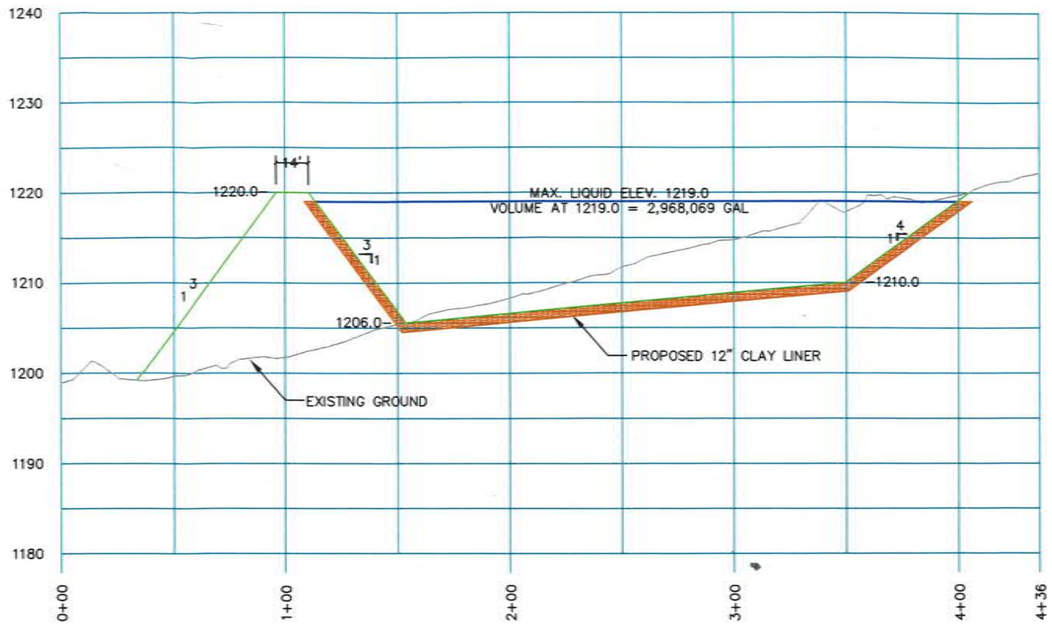
COMPOST FACILITY
SE 1/4, SECTION 35, T-80-N, R-42-W
HARRISON COUNTY, IOWA

SITE PLAN

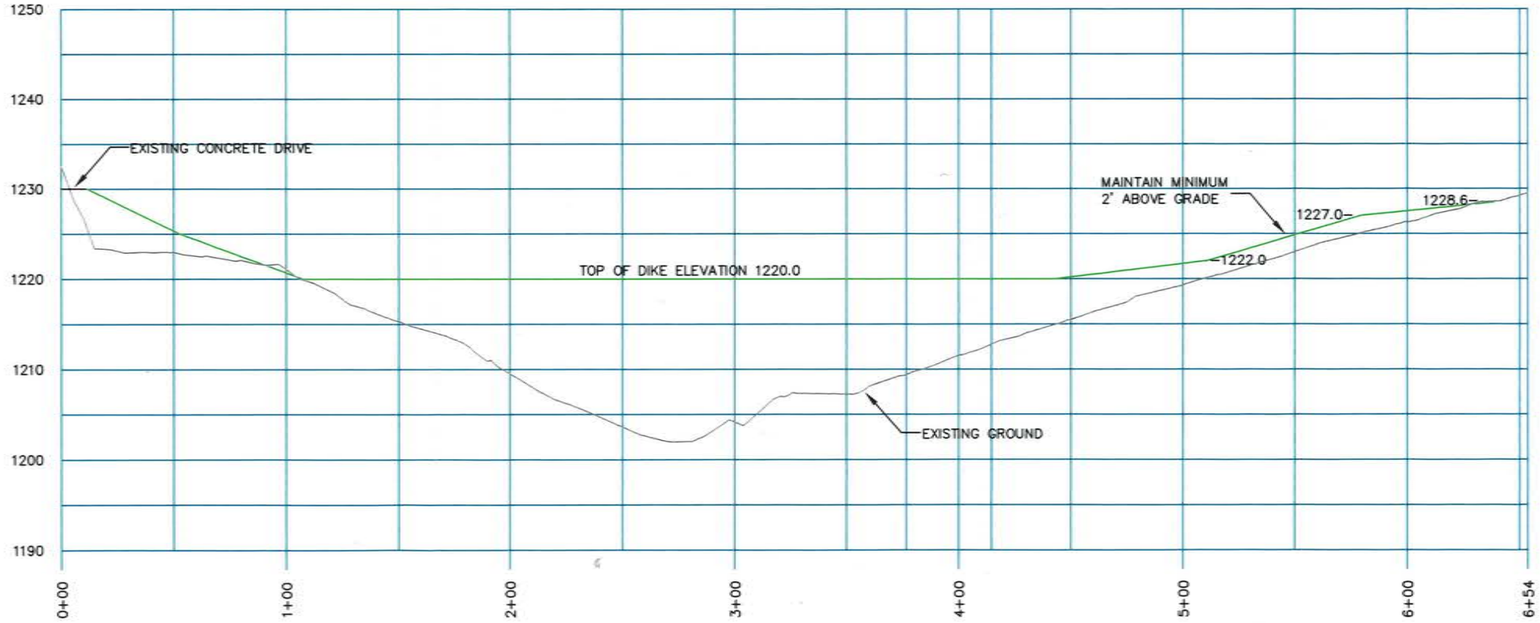
PROJECT NO.	SHEET NO.
21-055	2 OF 5



BASIN LAYOUT



CROSS SECTION A-A
(NOT TO SCALE)



CROSS SECTION B-B
(NOT TO SCALE)

REV	DATE	DESCRIPTION	DRN BY	CHK BY
0	12/01/25	ISSUED FOR PERMIT	TMW	JDS

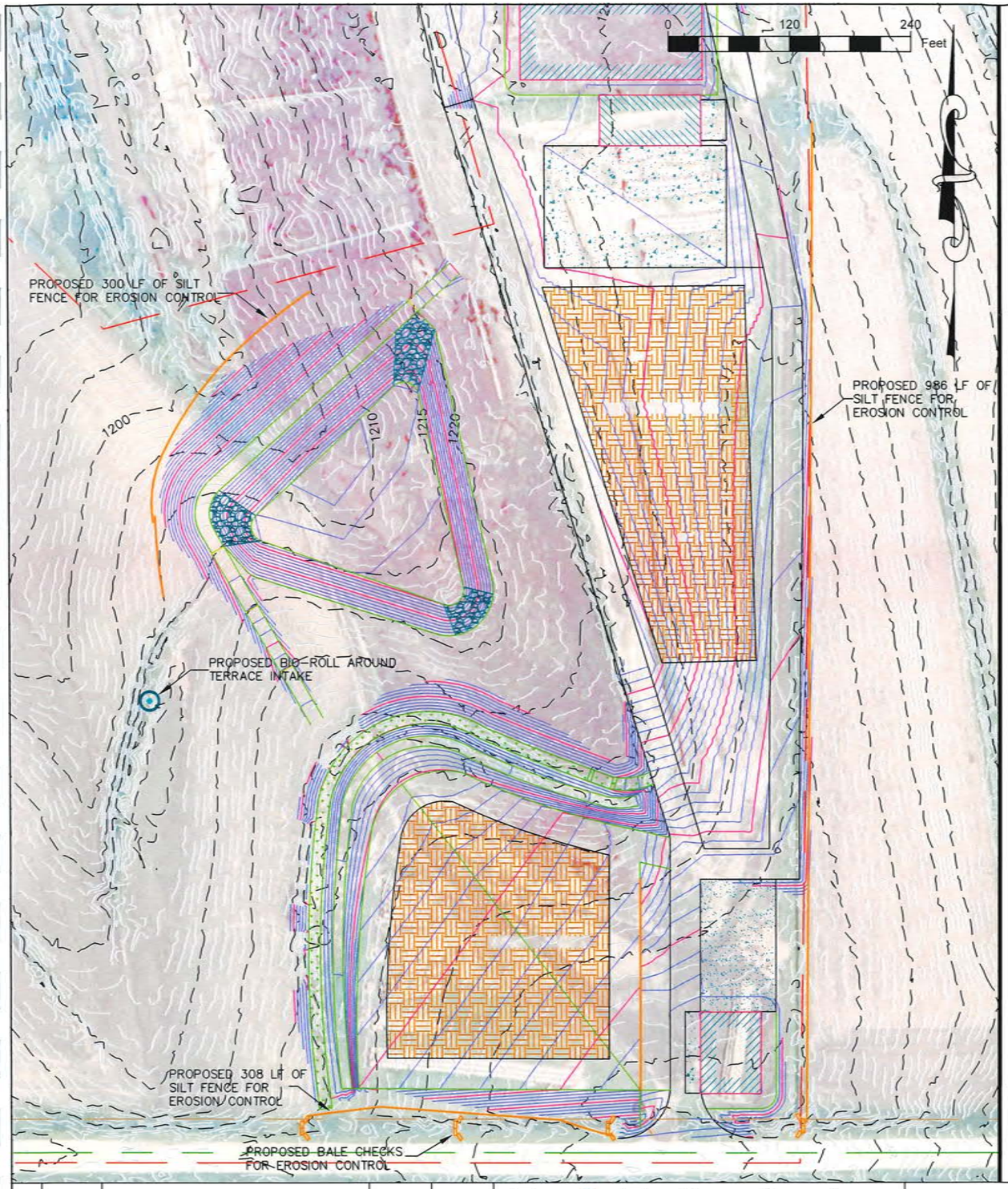
ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200

WINR
220TH STREET
WOODBINE, IOWA 51579

COMPOST FACILITY
SE 1/4, SECTION 35, T-80-N, R-42-W
HARRISON COUNTY, IOWA

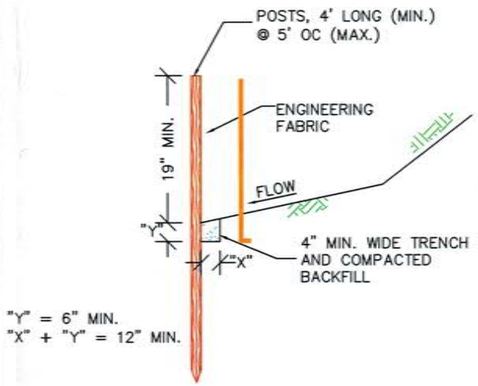
CROSS SECTIONS

PROJECT NO.	SHEET NO.
21-055	3 OF 5

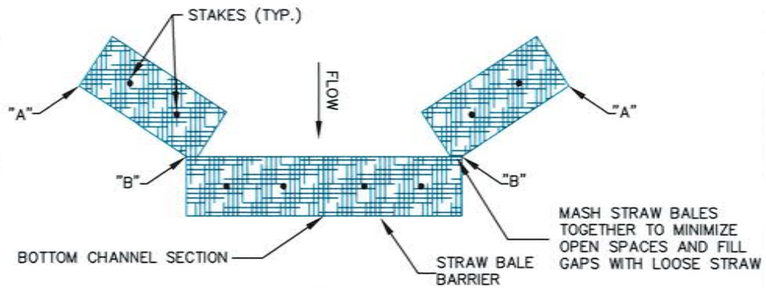


*NOTE: EROSION CONTROLS TO REMAIN UNTIL VEGETATION HAS BEEN ESTABLISHED

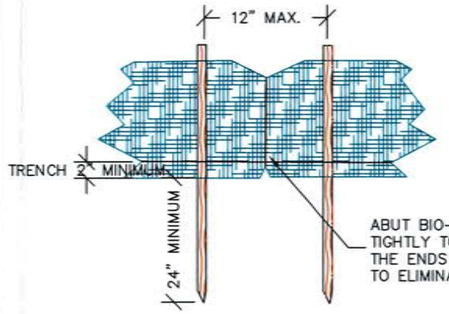
NOTES:
1. THE MINIMUM LONGITUDINAL SPLICE OVERLAP SHALL BE 2' WITH A POST AT EACH END
2. SECURE FABRIC TO POSTS



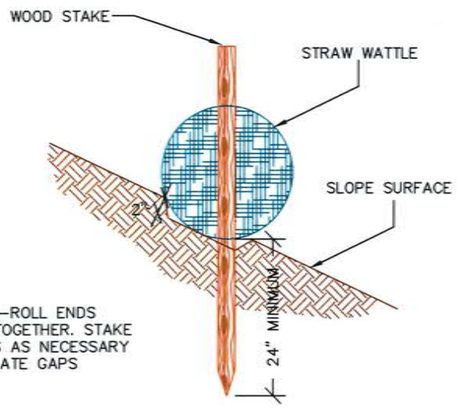
SILT FENCE DETAIL
(NOT TO SCALE)



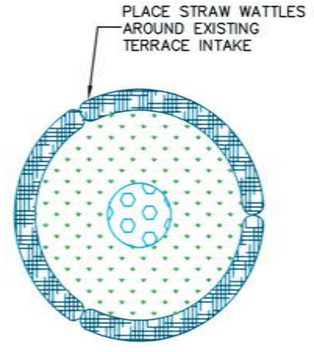
STRAW BALE DITCH CHECK DETAIL
(NOT TO SCALE)



WATTLE JOINT DETAIL
(NOT TO SCALE)



WATTLE DETAIL
(NOT TO SCALE)



WATTLES AT INTAKE
(NOT TO SCALE)

REV	DATE	DESCRIPTION	DRN BY	CHK BY
0	12/01/25	ISSUED FOR PERMIT	TMW	JDS

ProAg Engineering, Inc.
77402 U.S. Highway 71, P.O. Box 181
Jackson, MN 56143
(507) 849-7200

WINR
220TH STREET
WOODBINE, IOWA 51579

COMPOST FACILITY
SE 1/4, SECTION 35, T-80-N, R-42-W
HARRISON COUNTY, IOWA

EROSION PLAN

PROJECT NO.	SHEET NO.
21-055	5 OF 5