

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT

**PERMIT TO OPERATE A SEPTAGE LAND  
APPLICATION SITE**

Haywood Jordan's Septic Tank Service  
Brenda Jordan and David Bennett  
221 Beulah Road  
Clinton NC 28328

is hereby issued a permit to operate Septage Land Application Site with permit # **SLAS-82-18** on SR 1827 in Sampson County at approximate position 35.07154° N latitude and -78.34719° W longitude. The site is to be operated in accordance with 15A NCAC 13B .0800 Septage Management, the information stated in the approved application, and the conditions of this permit. The unauthorized disposal of any liquid or solid wastes other than those specified in the conditions of this permit will be considered a violation of the conditions of this permit. Failure to comply with the conditions of this permit may result in permit suspension, permit revocation, action for injunctive relief, administrative penalties, or other remedies as provided in G.S. 130A, Article 1., Part 2.

This permit shall be reviewed annually to determine if soil test results and management activities are in compliance with the Septage Management Rules and the conditions of this permit. Modifications, where necessary, shall be made in accordance with rules in effect at the time of review.

Date Issued

12/21/11

  
\_\_\_\_\_  
Michael E. Scott, Chief  
Solid Waste Section

Operator: Brenda Jordan & David Bennett  
SLAS #: 82-18  
County: Sampson

Page 2 of 3

**Permit Conditions:**

1. This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards of both surface and ground waters.
2. This site shall be operated and maintained in accordance with the nutrient management plan submitted by Brenda Jordan and David Bennett and approved by the Division of Waste Management. The site shall remain in a pine plantation. Additional nutrients may need to be added to the site in addition to septage. It is recommended that forty (40) lb/ac of potash along with 10 to 30 lb/ac of magnesium be applied on an annual basis depending on soil testing results. This can be accomplished by broadcasting 200 lb/ac/yr of sulfate of potash magnesia. If areas of missing or dying trees develop, these areas will be replanted in February. Annual bush hogging or herbicide applications will be used as necessary until shading prevents undesirable competition from the understory. All discharges shall be at locations on the site consistent with the nutrient management plan. The preceding information is based on septage being evenly applied over the entire site by a liquid spreader truck properly calibrated or a tractor drawn spreader.
3. This site shall be operated and maintained in accordance with the erosion and runoff control plan submitted by Brenda Jordan and David Bennett in such a manner as to prevent the migration of wastes off of the designated waste receiving site. A 10-ft buffer of pine trees shall remain around the perimeter of the site. Any site improvements noted in the plan must be installed within 30 days of plan approval. The installation of groundwater monitoring wells shall be required as deemed necessary by the Division.
4. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other local, state, and federal government agencies which have jurisdiction. It is the responsibility of the Permittee to be in compliance with the Federal Regulations listed in the Code of Federal Regulations, 40 CFR Part 503.
5. This permit may be modified or reissued at any time to incorporate any conditions, limitations and / or monitoring requirements the Division deems necessary to adequately protect the environment and public health.
6. **This site is only permitted for the land application of domestic septage and grease septage.** Domestic septage pH shall be raised to 12 or higher by alkali addition and, without the addition of additional alkali, shall remain at 12 or higher for 30 minutes prior to land application. Grease septage or grease septage mixed with domestic septage shall be raised to pH 12 or higher by alkali addition and, without the addition of additional alkali, shall remain at 12 or higher for 2 hours prior to land application.
7. **This site contains approximately 5.9 acres that are available for septage disposal.** The maximum annual application rate is 17,000 gallons per acre per year for a total, maximum annual application of 100,300 gallons. These application rates assume equal septage distribution, on an annual basis, over the permitted area. Monthly septage applications shall not exceed the monthly relative application rates given in the approved nutrient management plan for the site.
8. An approved above ground septage detention system with a minimum design capacity of 3,000 gallons shall be available prior to operation of this site unless an approved wastewater treatment plant is available for use during periods of adverse weather. The storage capacity may be adjusted if it is demonstrated during the operation of the site that this volume of storage is inappropriate.

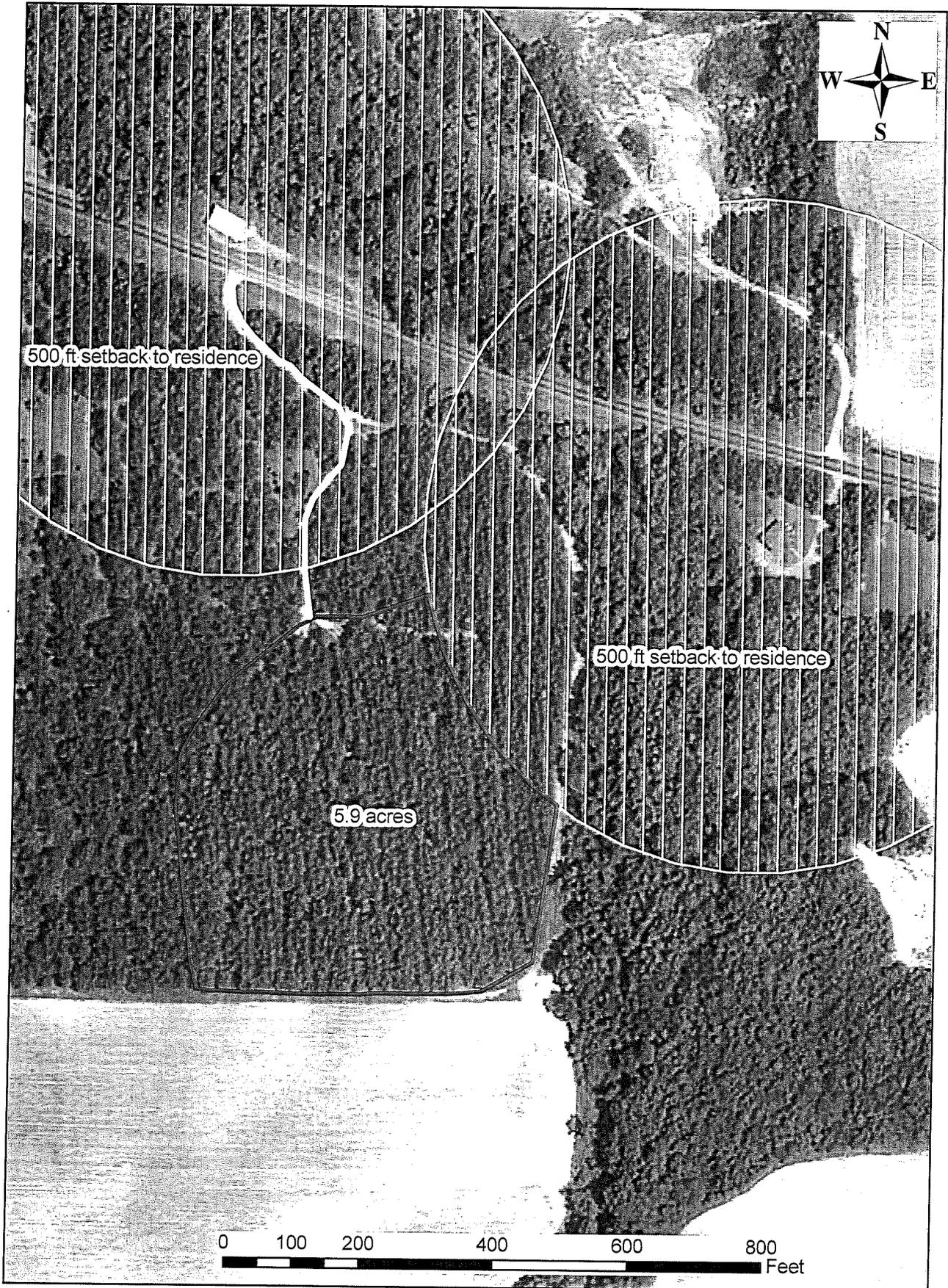
Operator: Brenda Jordan & David Bennett  
SLAS #: 82-18  
County: Sampson

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9. Only the area designated on the attached site map(s) shall be utilized for septage disposal. Each load of septage discharged at the site shall be distributed from a moving vehicle in such a manner that there is no standing water when the discharge is complete.
10. Septage shall not be applied during any precipitation event, or if there is standing water on the soil surface, if the soil surface is frozen, or if the soil surface is snow covered. The Permittee shall consider pending weather conditions when making the decision to land apply in order to prevent any discharge of septage outside of the permitted boundary.
11. Septage applications that will result in ruts greater than three inches in the soil surface are prohibited.
12. Any discharge of septage outside of the permitted boundaries via runoff, aerial drift, etc. is prohibited.
13. This permit shall become void unless the land application activities are carried out in accordance with the conditions of this permit and in the manner approved by this Division. No one other than the Permittee shall discharge septage at this site without prior appropriate notification and written approval of the Division.
14. Prior to any transfer of this land, a notice shall be given to the new owner that gives full details of the materials applied or incorporated at this site. The Division shall be notified prior to site closure. This permit is non-transferable.
15. **This permit shall expire on December 31, 2015.** Modifications, when necessary, shall be made in accordance with the rules in effect at the time of renewal. An application for permit renewal shall be submitted at least ninety (90) days prior to the permit renewal date. A septage application log for the period of time this permit was valid shall be submitted along with an application for permit renewal or modification. The information required in the log is described in Rule 15A NCAC 13B .0838 (e) (1) of the NC Septage Management Rules and the Code of Federal Regulations, 40 CFR Part 503.17 (b).
16. Records shall be kept in accordance with 40 CFR 503.17 (b). These records shall be made available to a representative of the Division upon request.
17. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises, or place on or related to the disposal site and facility at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be kept under the conditions of this permit; or may obtain samples of groundwater, surface water, or leachate.
18. All pertinent setbacks shall be clearly located on the site. Boundaries of the permitted septage land application field shall be clearly marked on the ground.
19. The areas that can be used for land application of septage shall be maintained at least 500 feet from any existing wells, residences, places of business, or places of public assembly. Septage shall not be disposed of within 50 feet of any property line or within 100 feet of any ditch unless specified otherwise.
20. **Prior to December 31, 2015, the pine plantation shall be evaluated by a professional forester and a written report of his findings submitted to this office. At a minimum, the report shall cover stand density, stand management, and any recommendations necessary to improve or maintain the plantation.**



# SLAS-82-18



Source: 2010 NAIP Color Imagery, NCDA; site boundary, NC DENR Division of Waste Management.  
Map created by NC DENR Division of Waste Management, Compost and Land Application Branch for permitting purposes only.



North Carolina Department of Environment and Natural Resources  
Division of Waste Management

Beverly Eaves Perdue  
Governor

Dexter R. Matthews  
Director

Dee Freeman  
Secretary

January 6, 2012

Ms. Brenda Jordan and Mr. David Bennett  
Haywood Jordan's Septic Tank Service  
221 Beulah Rd.  
Clinton, NC 28328

**RE: SLAS 82-18 Permit Renewal  
Haywood Jordan's Septic Tank Service  
SR 1827 in Sampson County**

Dear Ms. Jordan and Mr. Bennett:

The NC Division of Waste Management has reviewed your application to renew septage land application site permit, **SLAS-82-18**, in Sampson County. Your application has been approved in accordance with NC Septage Management Rules and your permit, **SLAS-82-18**, is enclosed. Please read all permit conditions carefully. Your nutrient management and soil erosion and runoff control plans you submitted have been included in your permit. In particular, pay close attention to **Permit Conditions 2, 6, 7, 10, 11, 12, 15, and 20**. The following is a summation of those Conditions.

- **Condition 2.** This condition also incorporates crop management details listed in the submitted nutrient management plan.
- **Condition 6.** States that this site is only permitted to receive domestic septage and grease septage. Disposal of any other type of septage or waste at this site is prohibited.
- **Condition 7.** States that there are 5.9 acres available at this site for land application of septage at a rate of 17,000 gal/ac/yr. **This allows for an annual maximum application amount of 100,300 gallons.** These rates along with the monthly rates listed in the nutrient management plan are not to be exceeded.
- **Condition 10.** Septage shall only be applied when soil and weather conditions are favorable for application.
- **Condition 11.** Soil conditions must be monitored such that any septage application will not result in ruts greater than three inches in the soil surface.
- **Condition 12.** Any discharge, including aerial drift, of septage outside of the permitted boundaries is prohibited.
- **Condition 15.** **This permit is set to expire on December 31, 2015.** Ninety (90) days prior to the expiration of your permit, you must submit an application for permit renewal along with your septage land application logs for the entire time your current permit was valid.

- **Condition 20.** Prior to the expiration of this permit, the pine plantation shall be evaluated by a professional forester and a written report submitted to this office.

Again, please pay close attention to all of the conditions within the enclosed permit. Remember that violations to the NC Septage Management Rules or this permit could subject you to administrative penalties of up to \$15,000 per violation per day. If you have any questions concerning your permits or septage in general, please do not hesitate to contact me at (919) 707-8283. When communicating to the Division about this permit, please refer to it as "**SLAS-82-18**".

Sincerely,



Chester R. Cobb, Soil Scientist  
Composting & Land Application Branch

Enclosures

cc: Central Office  
Donald Carr, Landowner  
Sampson County Health Department

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# APPLICATION FOR A PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

North Carolina Department of Environment and Natural Resources  
Division of Waste Management – Solid Waste Section  
401 Oberlin Rd., Ste. 150, Raleigh, N.C. 27605



## I. Site and Operator Information

1. Applicant                    **Haywood Jordan Septic Tank Service**  
                                      **David Benett**  
Address                        **221 Beulah Road**  
                                      **Clinton, NC 28328**  
Phone                            **910-592-6630**
  
2. Contact person for site operation (if different from applicant): **David Benett**  
Title or position    **Owner**                    Phone **910-592-6630**  
Address                    **221 Beulah Road**  
                                      **Clinton, NC 28328**
  
3. Landowner                    **Donald Carr**  
Address                        **PO Box 9056**  
                                      **Fayetteville, NC 28311**
  
4. Site Location:            County **Sampson**            State Road Number **Grady Road**  
Directions to site: **From Clinton, 421 North to Browns Church Road, turn right, merges with Basstown Road, continues straight. Turn left at Grady Road.**
  
5. Indicate whether request is: new \_\_\_\_\_ renewal **XXXXX** modification \_\_\_\_\_  
  
For a permit renewal or modification, provide the following information:  
Existing site permit number: **NCS 00273**    permit expiration date: **Extended from April 18, 2011**
  
6. Number of acres meeting the requirements of the N.C. Septage Management Rules: **7 acres.**
  
7. Substances other than septage or grease trap pumpings previously disposed of on the site:  
(a) **None XXXXX**, or (b) Attach a list indicating other substances, the amounts discharged, and the dates of discharge.
  
8. Attach written, notarized landowner authorization to operate a septage disposal site signed by the landowner (if the permit applicant does not own the property). *If a corporation owns the land use a corporate landowner authorization form. If limited liability company owns the land, use a limited liability company landowner authorization form.*  
**Form on file with NCDENR as part of original application.**
  
9. Attach site evaluation report, including aerial photograph and soil analysis with metals results, unless the Division prepared the report.
  
10. Attach a vicinity map (county road map showing site location).

(over)

II. Site Management Information:

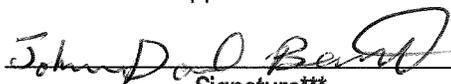
The following information shall be included with the application form:

1. Nutrient Management Plan  
**On file with NCDENR**
2. Soil Erosion and Runoff Control Plan  
**On file with NCDENR**
3. Alternative plan for disposal (detention facility permit number or wastewater treatment plant authorization): **Permit in force for WWTF (SDTF 82-20) as alternative plan.**
4. Types of septage proposed to be discharged at the site (check all that apply):
  - (a) Domestic septage pumped from septic tanks XX
  - (b) Grease trap pumpings XX
  - (c) Portable toilet waste N/A
  - (d) Commercial / Industrial septage N/A
5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): **Rear dispersion discharge of septage that has a verified pH of 12 or higher at the time of application. Hydrated Lime is the catalyst to ensure pH compliance. Grease mixture pH is also verified and is circulated in tank for 2 hours prior to land application.**
6. Proposed method of applying septage to land, including septage distribution plan if required \* (use additional paper to explain if necessary): **Rear dispersion of discharge on pines with even application to avoid pooling or residual buildup.**
7. Demonstration from the appropriate state or federal government agency that the land application site complies with the Endangered Species Law \*\* or if any part of the site specified is not agricultural land (use additional paper to explain if necessary): Assessment on file with NCDENR

III. Certification

I hereby certify that:

1. The information provided on this application is true, complete, and correct to the best of my knowledge.
2. I have read and understand the N.C. Septage Management Rules, and
3. I am aware of the potential consequences, including penalties and permit revocation, for failing to follow all applicable rules and the conditions of a Septage Land Application Site permit.

  
 \_\_\_\_\_  
 Signature\*\*\*

12-26-11  
 \_\_\_\_\_  
 Date

David Bennett  
 \_\_\_\_\_  
 Print name

Owner  
 \_\_\_\_\_  
 Title

Note: This application will not be reviewed until all parts of the application are complete.

\* Refer to Section .0821(e) of the N.C. Septage Management Rules.

\*\* Refer to Section .0821(g) of the N.C. Septage Management Rules.

\*\*\*Signature of company official required.



# Soil Test Report

12/6/2011 SERVING N.C. RESIDENTS FOR OVER 60 YEARS

## Agronomist Comments

The heavy metal report is found on a separate page. Using Mehlich 3 as a soil test extractant, background levels of these metals typically seen in NC soils when analyzed are as follows: arsenic (As)- 4.5 ppm, cadmium (Cd)- 0.1 ppm, chromium (Cr)- 0.2 ppm, lead (Pb)- 4.2 ppm, nickel (Ni)- 0.8 ppm, & selenium (Se)- 0.2 ppm (FY2005-2007). Although the above metals here are not believed to pose a concern for plant growth, continue to monitor these and note where elevated above background levels.

Note any lime and fertilizer recommendations. Where soil test phosphorus (P) is very high (P-I > 100), crops will not respond to additional P applied. Where the sulfur index (S-I) is 25 or less, sulfur at a rate of 20 to 25 lbs per acre may be of benefit.

Jeanne Myers, Agronomist  
Dec. 6, 2010



Copies To: Cobb, Chester

Grower: **Jordan, Brenda**  
c/o Haywood Jordan Septic  
221 Beulah Rd  
Clinton, NC 28328  
Farm: SLAS 8218

**Sampson County**

Field Information		Applied Lime											Recommendations										
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P2O5	K2O	Mg	S	Cu	Zn	B	Mn	See Note							
8218					1st Crop: Pine,M	0	100-150	0	20-40	0	0	0	0	0		11							
					2nd Crop: Pine,M	0	100-150	0	20-40	0	0	0	0	0		11							
Test Results																							
Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-Al(1)	Mn-Al(2)	Zn-I	Zn-Al	Cu-I	S-I	SS-I	NO3-N	NH4-N	Na		
MIN	0.46	1.27	12.0	100.0	0.0	7.0	342	24	86.0	13.0	55	828	828	828	828	790	53	53			0.1		

# Heavy Metal Soil Test Report

Report #: 17013

Jordan, Brenda  
 c/o Haywood Jordan Septic  
 221 Beulah Rd  
 Clinton, NC 28328  
 Sampson County

## MEHLICH-3 EXTRACTION

Questions concerning these analyses should be referred to the Agronomic Division, Soil Testing

Sample ID	Cd Cadmium	Ni Nickel	Pb Lead	Se Selenium	Cr Chromium	As Arsenic	Al Aluminum	Fe Iron
8218	0.10	0.30	3.70	0.00	0.20	0.20	1,001.00	117.10



Landowner's Authorization to Operate a Septage Land Application Site

North Carolina Department of Environment and Natural Resources  
Division of Waste Management - Solid Waste Section  
401 Oberlin Rd, Ste. 150, Raleigh, NC 27605



I, DONALD CARR (name of site owner) hereby certify that I am the owner of  
7 acres of land located AT GRADY ROAD IN SAMPSON COUNTY  
and identified by BOOK 1194, Pg 611 (book and page of recorded deed  
or tax map parcel) and that I agree to allow HAYWOOD JORDAN'S SEPTIC SERVICE (name of site  
operator) to use said land for septage land application for a period of 5 YEARS (length  
of time), beginning DECEMBER 2011 (month, day and year) and that I have read the  
North Carolina Septage Management Rules \*, and I understand and agree to maintain the restrictions on  
land use after septage land application ends \*\*. I further understand that no septage may be land applied  
until the Division of Waste Management has issued a permit for a septage land application site. The above  
described property is owned solely by me or jointly with Donald Carr  
\_\_\_\_\_ (names of all co-owners, or state none).

John P. O'Brien

Donald Carr  
Signature(s)

Sworn to and subscribed before me this 27 day of December, 20 11.

ROBERT C. FIELDS Robert C. Fields  
(Notary Public)

(OFFICIAL SEAL)

My Commission expires: 7 APRIL 2015

\* 15A N.C. Admin. Code 13B Section .0800

\*\* As required by Rule .0826

# APPLICATION FOR A PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

North Carolina Department of Environment and Natural Resources  
Division of Waste Management – Solid Waste Section  
401 Oberlin Rd., Ste. 150, Raleigh, N.C. 27605



## I. Site and Operator Information

1. Applicant Brenda Jordan and David Bennett  
Address 221 Beulah Road  
Clinton, North Carolina 28328  
Phone 910-592-6630

2. Contact person for site operation (if different from applicant): Same as Above  
Title or position \_\_\_\_\_ Phone \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_

3. Landowner Donald Carr  
Address PO Box 9056  
Fayetteville, North Carolina 28311

4. Site Location: County Sampson State Road Number Grady Road  
Directions to site: From Clinton – Travel NC421 North to Browns Church Road; the road turns  
Into Bastown Road. Travel North to Grady Road, located on your left.

5. Indicate whether request is: new \_\_\_\_\_ renewal XXX modification \_\_\_\_\_

For a permit renewal or modification, provide the following information:

Existing site permit number: NCS00273 permit expiration date: March 2010

6. Number of acres meeting the requirements of the N.C. Septage Management Rules:  
7 acres of Pines

7. Substances other than septage or grease trap pumpings previously disposed of on the site:  
(a) None xxx or (b) Attach a list indicating other substances, the amounts discharged, and the dates of discharge.

8. Attach written, notarized landowner authorization to operate a septage disposal site signed by the landowner (if the permit applicant does not own the property). ***If a corporation owns the land use a corporate landowner authorization form. If limited liability company owns the land, use a limited liability company landowner authorization form.***

***\*\*\*Form on File with Original Application to NCDENR***

9. Attach site evaluation report, including aerial photograph and soil analysis with metals results, unless the Division prepared the report. ***\*\*\*Report on File with Original Application to NCDENR***

10. Attach a vicinity map (county road map showing site location).

***\*\*\* On File with Original Application to NCDENR***

II. Site Management Information:

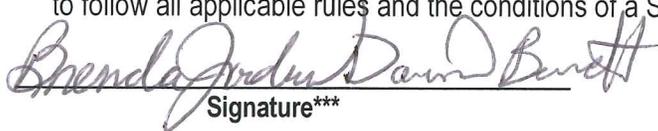
The following information shall be included with the application form:

1. Nutrient Management Plan
2. Soil Erosion and Runoff Control Plan
3. **\*\*\* On File with Original Application to NCDENR – Completed by Dan Bailey 12/28/2009**
3. Alternative plan for disposal (detention facility permit number or wastewater treatment plant authorization): Permit in force for WWTP and SDTF 82-20 as Back-Up Plan.
4. Types of septage proposed to be discharged at the site (check all that apply):
  - (a) Domestic septage pumped from septic tanks xxx
  - (b) Grease trap pumpings xxx
  - (c) Portable toilet waste N/A
  - (d) Commercial / Industrial septage N/A
5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): Rear dispersion discharge of septage measures a pH of 12 or higher at the time of land application. The pH is controlled by using Hydrated Lime, which is mixed into the tank and remains in the tank for a minimum of 30 minutes prior to land application. Grease pH remains in the tank for 2 hours prior to land application, once mixed with lime.
6. Proposed method of applying septage to land, including septage distribution plan if required \* (use additional paper to explain if necessary): Rear dispersion of septage on the pines with even application to ensure no pooling or residual buildup.
7. Demonstration from the appropriate state or federal government agency that the land application site complies with the Endangered Species Law \*\* or if any part of the site specified is not agricultural land (use additional paper to explain if necessary): Assessment on File

III. Certification

I hereby certify that:

1. The information provided on this application is true, complete, and correct to the best of my knowledge.
2. I have read and understand the N.C. Septage Management Rules, and
3. I am aware of the potential consequences, including penalties and permit revocation, for failing to follow all applicable rules and the conditions of a Septage Land Application Site permit.

  
Signature\*\*\*

28 – May – 2010

Date

Brenda Jordan / David Bennett  
Print name

Owners  
Title

Note: This application will not be reviewed until all parts of the application are complete.

\* Refer to Section .0821(e) of the N.C. Septage Management Rules.

\*\* Refer to Section .0821(g) of the N.C. Septage Management Rules.

\*\*\*Signature of company official required.



Landowner's Authorization to Operate a Septage Land Application Site

North Carolina Department of Environment and Natural Resources  
Division of Waste Management - Solid Waste Section  
401 Oberlin Rd, Ste. 150, Raleigh, N.C. 27605



I, Donald Carr (name of site owner) hereby certify that I am the owner of \_\_\_\_\_ acres of land located take 4.21 out of Clinton to Bass Town Rd. and identified by go to Brady Rd. on Rite side of Rd. (book and page of recorded deed or tax map parcel) and that I agree to allow Playwood Jordan Septic (name of site operator) to use said land for septage land application for a period of Dec. 31 - 09 - Dec 31, 2015 (length 5 yrs of time), beginning Dec. 31. 09 thru Dec 31, 2015 (month, day and year) and that I have read the North Carolina Septage Management Rules \*, and I understand and agree to maintain the restrictions on land use after septage land application ends \*\*. I further understand that no septage may be land applied until the Division of Waste Management has issued a permit for a septage land application site. The above described property is owned solely by me or jointly with \_\_\_\_\_

\_\_\_\_\_  
(names of all co-owners, or state none).

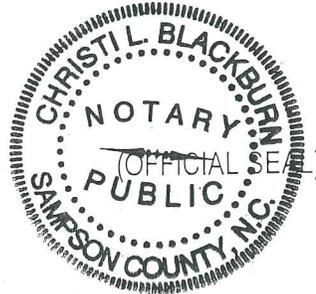
map # Parcel 04-0192920-02

Signature of landowner Donald Carr Date 12-17-09

Signature of landowner \_\_\_\_\_ Date \_\_\_\_\_

Sworn to and subscribed before me this 17 day of DEC, 20 09.

Christi L Blackburn  
(Notary Public)



My Commission expires: Nov 3, 2013

\* 15A N.C. Admin. Code 13B Section .0800

\*\* As required by Rule .0826

Brunde Jordan

Nutrient Management Plan For  
Septage Application of Pine Trees  
Site # 82-18



A. General Information

1. Field contains 10 useable acres for septage application. (See attached map).
2. The soil series for this site is a wagram.
3. Septage will not be applied where the site is untrafficable. (Untrafficable is defined as soil that will allow a loaded truck (spreader) to leave a depression in sod greater than 3 inches in depth. A depth of greater than 3 inches would cause concern in pine trees.
4. An annual soil test will be taken to monitor pH, nutrients, and heavy metal levels on the site.

B. Crops

1. Pine trees (nitrogen rate for timber)  
60 lbs. Pan/Acre/Year

C. Nitrogen needs for pine trees (timber)

1. See following sheet: Fertilization of tree species
2. See following sheet: Nitrogen availability, residual, loading rates, etc.

D. Septage Application Rate

1. Yearly rate of 17,000 gallons/acre (accounts for residual nitrogen).

E. Application Timing

1. See following sheet: Fertilization of tree species

F. Soil pH: Soil pH is presently 6.7 on this site

Elemental sulfur is recommended at a rate of 200 lbs./acre to reduce pH to 6.0 - 6.2.

G. Additional Fertility Requirements

1. Need to supply 40 lbs./acre of potash along with 25 to 30 lbs./acre of magnesium. This can be accomplished by broadcasting sulfate of potash magnesia at a rate of 200 lbs./acre/year.

H. Application Method

1. The preceding information is based on septage being evenly applied over the entire site by a liquid spreader truck properly calibrated or a tractor drawn spreader. See calibration sheets following.

I. Soil Erosion and Runoff Control Plan

No erosion control is necessary for this site due to slope, cover and setback requirements.

J. Understory Control

1. None needed due to age and shading of pine trees.

K. Pine Stand Management

1. Stand needs to be assessed by a knowledgeable forestry person for thinning recommendations. This stand is between 10-20 years old.

Submitted By: David Bailey  
Brenda Jordan Date 5-28-2010

Plan Prepared By: Dan Bailey Date 12/29/2009

Address: 55 AGRICULTURE PLACE

Clinton, N.C. 28328

Phone #: 910-592-7161 Coop. EXTENSION

# Fertilization of Tree Species



When fertilizing tree species the following guidelines are suggested.

Tree Species	Plant Available Nitrogen Rates - - - lbs PAN/acre/year - - -
Pine	40 to 60 N.C.D.A. 100-150
Hardwoods	70 to 100

*Limiting Nitrogen to limit Calcium Carbonate ↑ pH  
SEPTAGE is LIME STABILIZED*

Optimum timing is important to utilize the nitrogen in an efficient and environmental management system. Applications of nitrogen should be made in late winter to early spring when root activity increases. This normally occurs 3 to 4 weeks before leaf out. If monthly applications are needed for land application divide the annual N application by 12. Since tree roots are active throughout the year uptake of low rates of N are possible. Nitrogen applications should not be made to water saturated soils

Potential long-term problems with waste applications include:

- Rising pH (above 6.2 is a problem with pine)
- Increased potential for insects or diseases
- Sodium adsorption with high sodium materials
- Hydrology impacts
  - i.e. applying large amounts of waste water on already wet sites. This can increase problems with drainage and affect species selection by favoring wet tolerant hardwoods rather than pine.
- Spray pressure with irrigation systems.
  - Pressures greater than 60 PSI can debark many tree species. "Barking" of trees degrades wood quality and may entice entry of insects and diseases.
- Stimulation of undergrowth
  - When applications of nitrogen are broadcast, in tree plantations, understory species readily compete for the nitrogen and their growth is stimulated. This may require additional management time and expenses to control understory species. In general, if nitrogen applications can be delayed until tree species are greater than five feet, the trees are more competitive.
- Application rates are low
  - This is because forests are not harvested annually, and materials may build to toxic levels with high annual applications. To identify potential problems before tree mortality occurs, always take foliar and soil samples.

# Important Considerations when Managing Nutrients to Protect Water Quality



## Septage

- Do:*
- Remember that the producer is responsible for any pollution caused by improper management of nutrients.
  - To avoid runoff, apply liquid or irrigated materials at levels less than the infiltration rate of the soil. Infiltration rates vary with the degree of soil saturation and should be taken into account when applying nutrients from liquid sources.
  - To avoid groundwater contamination, apply no more liquid than the amount necessary to fill the soil profile within the crop rooting depth to field capacity.
  - To properly design and implement a nutrient management system, have septage analyzed. If a sample cannot be taken before land application, use the best available information for that material. Then during land application or loading, take a representative sample of the material and have it analyzed. After results are received, reassess the nutrient management plan and make any necessary changes.
  - To maximize nutrient uptake for plant growth and development and to reduce the potential for pollution, apply nitrogen from fertilizers or by-products less than 30 days before planting.
  - Develop field borders, which serve as a nutrient trap if field runoff occurs.
  - If septage has a calcium carbonate equivalent, be sure to assess the lime effect at calculated application rates for the primary nutrient. Many products with calcium carbonate need to be treated as a primary lime source rather than a primary nutrient source.
  - Store nutrient or lime sources that can't be applied at the appropriate time for plant use properly to prevent groundwater or surface water contamination.
  - Locate temporary and permanent storage structures a minimum of 100 feet from perennial waters as indicated on the most recent version of U.S.G.S. 1:2400 (7.5 minute) scale maps.
- Don't:*
- Don't apply manure or by-products at rates greater than agronomic rates.
  - Don't spread septage on soils designated as highly erodible (HEL) unless treated to meet soil loss or "T" (value that is considered to be an acceptable field loss tons/ac/yr), or unless the application is part of a treatment program such as soil amendment.
  - Don't apply septage on soils with high runoff potential or steep slopes.
  - Don't apply septage to soils that are water saturated, frozen or snow covered. These conditions promote runoff and may contribute to surface water contamination.
  - Don't apply septage before a storm. Greatest nutrient runoff occurs when significant rain falls within 24 hours after application.
  - Don't apply septage near surface waters or wells.

## *Ask Yourself:*

- Has septage been analyzed for nutrient and calcium carbonate content?
- Has a current soil sample analysis been used in the development of this plan? (Attach analysis in appendix.)
- Are the yield goals realistic for the crop, nature of the fertilizer or lime source, and management capabilities of the producer or spreader?
- Have application records and an appropriate storage and filing system been established to keep and easily retrieve information?
- Do storage structures appear to adequately protect nutrients from runoff or leaching?

Calculations for Available  
Nitrogen, Phosphorus, Potassium

Septage Analysis

	<u>mg/l</u>	<u>lbs./1000 gal.</u>
Total nitrogen	815	6.8
Total phosphorus	423	3.5
Total potassium	97	.8

Nutrient Availability (1st Year)

		<u>lbs./1000 gal</u>
* Available nitrogen	1.9 BR	2.7 SI
Available phosphorus	2.1 BR	2.6 SI
Available potassium	.6 BR	.7 SI

Residual Nitrogen Available

	<u>lbs./1000 gal.</u>
2nd yr.	.7
3rd yr.	.35



\* This plan is based on  
EPA - AVAILABLE NITROGEN = 2.6 (lbs/1000 gallons)

Phosphorus, potassium, zinc, and copper

is based on values of next page. (lbs/1000 gallons)

Quality of Liquid Waste  
Cannady Brothers  
Sampson County, North Carolina

PARAMETER	CONCENTRATION		MASS/1000 GAL.
	mg/l		lb/1000 gals
T Nitrogen	815	13145.2	6.8
T Phosphorus	423	7026.6	3.5
Potassium	97	1611.3	.8
Calcium	7942	131926.9	66.2
Magnesium	214	3554.8	1.8
Sodium	119	1976.7	1.0
SAR	4	N/A	N/A
Pb	1.01	16.8	.008
Zn	50.4	837.2	.4
Cu	24.1	400.3	.2
Ni	1.08	17.9	.009
Cd	.02	.3	.0002
Cr	.04	.7	.0003
S	334	5548.2	2.8
CaCO	1.84%		9.23
TS	6.02%	N/A	120.4

NCSU Weaver Lab/Bob Rubin









# Soil Test Report

SERVING N.C. RESIDENTS FOR OVER 60 YEARS

Grower: Jordan, Haywood/Brenda  
 2760 W Main St Ext  
 Clinton, NC 28328  
 Farm: SLAS 8281

Copies To: Gallo, Joe  
 Lyons, Ted/Michael Scott



Received: 11/03/2008 Completed: 11/05/2008

Sampson County

## Agronomist Comments

The heavy metal report is found on a separate page. Using Mehlich 3 as a soil test extractant, background levels of these metals typically seen in NC soils when analyzed are as follows: arsenic (As) - 4.5 ppm, cadmium (Cd) - 0.1 ppm, chromium (Cr) - 0.2 ppm, lead (Pb) - 4.2 ppm, nickel (Ni) - 0.8 ppm, & selenium (Se) - 0.2 ppm (FZ2005-2007). Although the above metals here are not believed to pose a concern for plant growth, continue to monitor these and note where elevated above background levels.

Note any lime and fertilizer recommendations. Note magnesium is low so 25 to 30 lb per acre of Mg is recommended; 0-0-22 (11.5% Mg) is an excellent source. Where soil test phosphorus (P) is very high (P-1 > 100), crops will not respond to additional P applied.

David H. Hardy, Agronomist

November 7, 2008

Field Information	Applied Lime	Recommendations	Lime	N	P2O5	K2O	Mg	S	Cu	Zn	B	Mn	See Note
Sample No.	Last Crop	Crop or Year	Mo Yr T/A	1st Crop:	2nd Crop:								
8218		Pine, M		0	100-150	30-50	\$	0	0	0	0	0	11

## Test Results

Soil Class	HM%	W/V	CBC	B3%	Ac	PH	P-1	K-1	Ca%	Mg%	Mn-1	Mn-Al(1)	Mn-Al(2)	Zn-1	Zn-Al	Cu-1	S-1	SS-1	NO3-N	NH4-N	Na	
MIN	0.46	1.38	8.4	93.0	0.6	6.7	307	19	88.0	5.0	45			669	669	800	49				0.1	

Handwritten note: Sulfur to lower pH

North Carolina



Tobacco Trust Fund Commission

Reprogramming of the laboratory-information-management system that makes this report possible is being funded through a grant from the North Carolina Tobacco Trust Fund Commission.

Thank you for using agronomic services to manage nutrients and safeguard environmental quality.  
 - Steve Troxler, Commissioner of Agriculture

# Heavy Metal Soil Test Report

## MEHLICH-3 EXTRACTION

Jordan, Haywood/Brenda  
 2760 W Main St Ext  
 Clinton, NC 28328  
 Sampson County

Report #: 13322



Questions concerning these analyses should be referred to the Agronomic Division, Soil Testing

Sample ID	Cd Cadmium	Ni Nickel	Pb Lead	Se Selenium	Cr Chromium	As Arsenic	Al Aluminum	Fe Iron
3218	0.10	0.30	1.60	0.00	0.20	2.30	917.80	107.50

-----mg/dm<sup>3</sup> (ppm)-----