



North Carolina Department of Environmental Quality

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION

PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

T-N-T Septic Service
Jody L. Thompson
PO Box 1005
Sneads Ferry, NC 28460

is hereby permitted to operate Septage Land Application Site with permit # **SLAS-67-12** located on Hwy 172 in Onslow County at approximate position 34.55478° N latitude and -77.41986° E longitude. This site is permitted only for operations that are conducted in accordance with the representations made in the approved application, with all conditions attached to this permit, and with all of the provisions of 15A NCAC 13B.0800 -- Septage Management. Failure to operate as permitted may result in the Department suspending or revoking this permit, initiating action to enjoin the unpermitted operation, imposing administrative penalties, or invoking any other remedy as provided in Chapter 130A, Article 1, Part 2 of the North Carolina General Statutes.

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

4/12/2016

A handwritten signature in blue ink, appearing to read 'Martin A. Gallagher', written over a horizontal line.

Martin A. Gallagher, Supervisor
Composting & Land Application Branch,
Solid Waste Section
Division of Waste Management, NCDEQ

CONDITIONS OF OPERATING PERMIT

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 This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards of both surface and ground waters.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 Jody Thompson and approved by the Division of Waste Management. The 11.8-acre site has been established in bermudagrass and is divided into 3 fields as Field 1 (2.6 acres), Field 2 (5.7 acres), and Field 3 (3.5 acres). This site shall be managed as Phase 2 within the approved nutrient management plan. The bermudagrass shall be overseeded with ryegrass, cereal rye, wheat, or oats by November 1 of each year. Areas where the bermudagrass stand falls below 80% in coverage shall be re-seeded in Cheyenne bermudagrass. The crops shall be harvested by cutting for hay or straw as described in the approved nutrient management plan. The 30-day waiting period between the last application of septage and the harvest of a crop shall be met by rotating septage applications between the three fields. All discharges shall be at locations on the site consistent with the crop rotation in the approved plan.
3. This site shall be operated and maintained in accordance with the erosion and runoff control plan submitted by Jody Thompson in such a manner as to prevent the migration of wastes off of the designated waste receiving site. A vegetative buffer shall remain established 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.

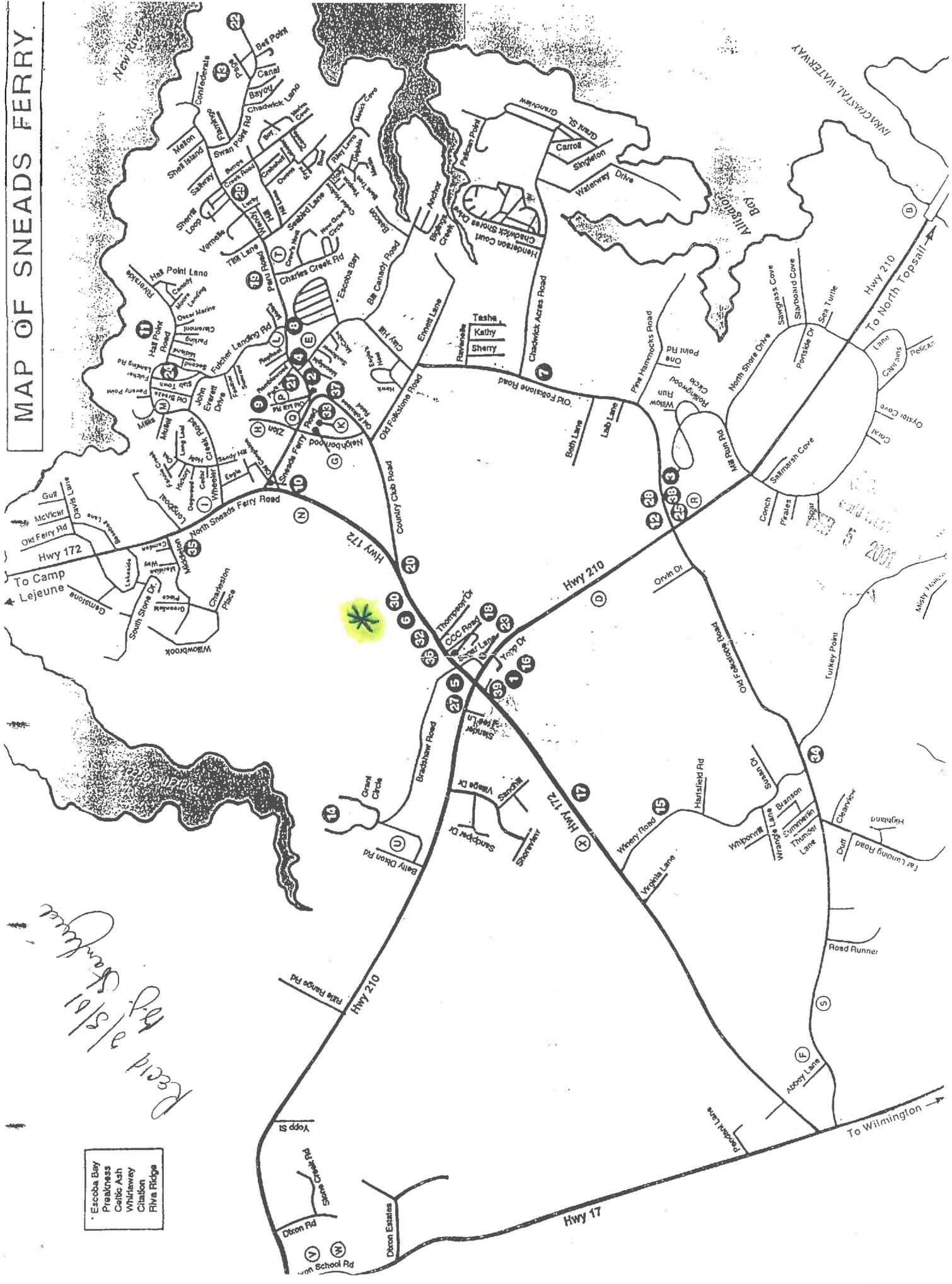
6. **This site is only permitted for the land application of domestic septage (including portable toilet waste), grease septage, and commercial/industrial septage. The land application of commercial/industrial septage shall only occur after a waste analysis has been performed and approval has been granted by the Division.** The pH of domestic septage 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. The pH of grease septage or grease septage mixed with domestic septage shall be raised to 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. Grease septage shall be diluted as required by 15A NCAC 13B .0838(a)(15) when applied over perennial vegetation.
7. **This site contains approximately 11.8 acres that are available for land application of septage.** The maximum annual application rate shall be 50,000 gal/ac/yr for a total maximum annual application volume of 590,000 gallons for the entire site. Application amounts to each disposal field shall not exceed the maximum annual application rate or the monthly application rates listed in the approved nutrient management plan. The maximum annual application rate assumes equal septage distribution, on an annual basis, over the entire permitted area.
8. An approved septage detention facility with a minimum design capacity of 12,000 gallons shall be available prior to operation of this site as per 15A NCAC 13B .0841(a). The storage capacity may be adjusted if it is demonstrated during the operation of the site that this volume of storage is inadequate.
9. Only the area designated on the attached site map 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 shall not be applied during periods of high soil moisture. 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 voidable 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 or an employee of the firm named in this permit shall discharge septage at this site without prior appropriate notification and written approval from 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, 2019.** An application for permit renewal shall be submitted at least ninety (90) days prior to the permit renewal date. When necessary, an application for permit modification shall be submitted for any proposed change listed in 15A NCAC 13B .0835(h). Along with the application for permit renewal or modification, the prescribed information listed in 15A NCAC 13B .0835(c) through (i) and the septage application records for the period of time this permit was valid shall be submitted.
16. Records shall be kept in accordance with 15A NCAC 13B .0838(e)(1) and the Code of Federal Regulations, 40 CFR Part 503.17(b) to document all septage applications to the site. 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. Field separations in the nutrient management plan and all pertinent setbacks shall be clearly located on the site. Boundaries of the permitted septage land application fields shall be clearly marked on the ground.

19. The areas that can be used for land application of septage shall be maintained to meet the minimum setback distances as described in 15A NCAC 13B .0837(d) such as 500 feet from any existing wells, residences, places of business, or places of public assembly. Also, septage shall not be disposed of within 50 feet of any property line, within 100 feet of any ditch, or within 200 to 300 feet of any surface water based on stream classification. **The setback to Class SA waters, 300 feet, was reduced by 50 percent based on 95 percent vegetative cover. The 95 percent vegetative coverage must be maintained in order for the setback distance to Class SA waters to be reduced by 50 percent.**

MAP OF SNEADS FERRY

- Escoba Bay
- Prairie
- Calico Ash
- Whiteway
- Clabon
- River Ridge



Read a/s/a/s
 Read a/s/a/s
 Read a/s/a/s

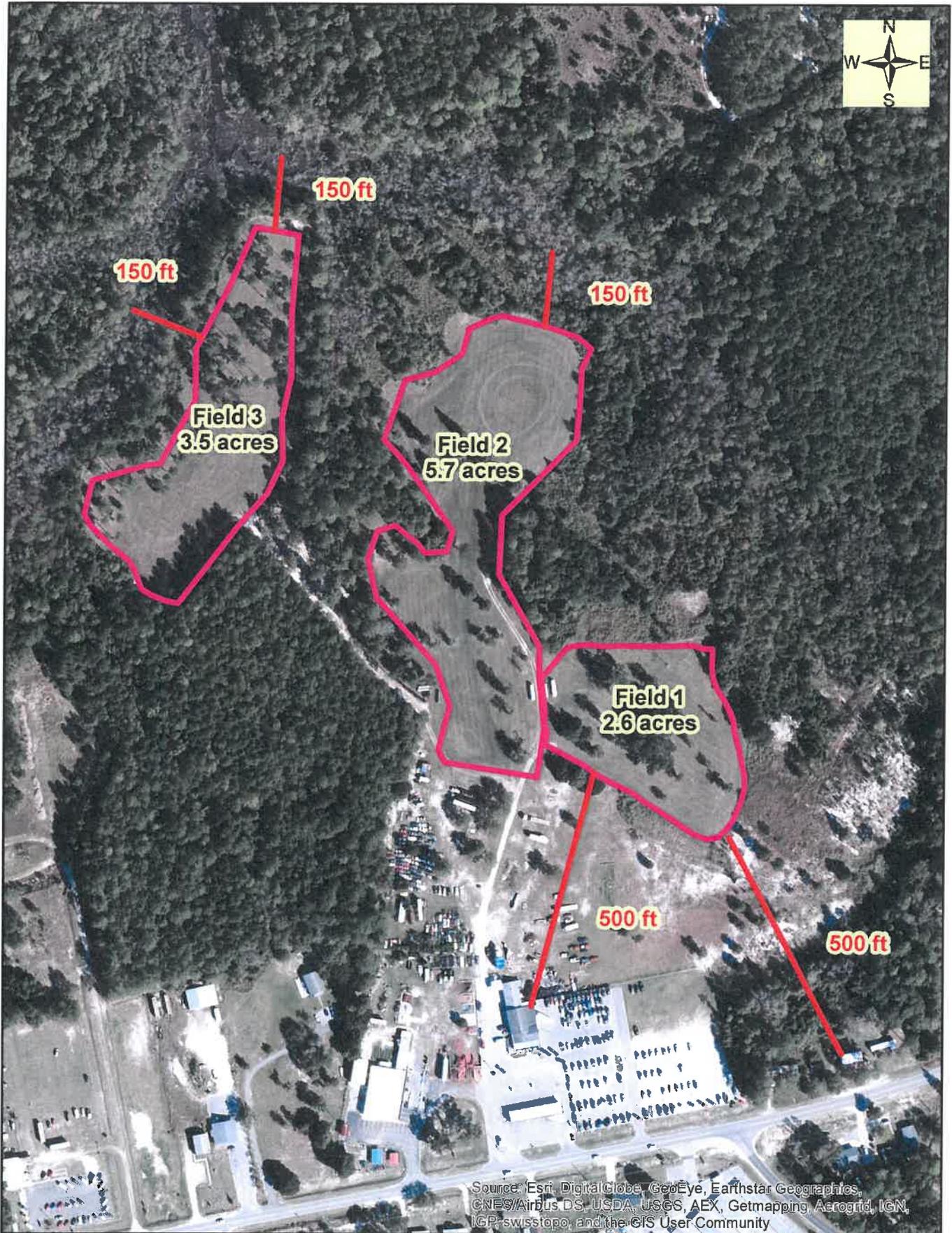
2001
 2001

To Wilmington

To North Topsail

To Camp Lejeune

SLAS-67-12



Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community. Map created by NC DEQ, Division of Waste Management for permitting purposes only.

1 in = 275 ft

crc, Apr. 2016



PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

MICHAEL SCOTT
Acting Director

April 20, 2016

Mr. Jody L. Thompson
T-N-T Septic Service
PO Box 1005
Sneads Ferry, NC 28460

**RE: SLAS-67-12 Permit Renewal
T-N-T Septic Service
Hwy 172 in Onslow County**

Dear Mr. Thompson:

The NC Division of Waste Management has reviewed your application to renew the operation of Septage Land Application Site, **Permit # SLAS-67-12**, in Onslow County. Your application has been approved in accordance with NC Septage Management Rules and your permit, **SLAS-67-12**, 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's conditions. **Please note within Permit Conditions 2 and 7 that the site's total acres is listed as 11.8 acres. This reflects a reduction in total acres due to incorrect acres listed for Fields 1 and 3 in the previous permit. The correct acres for Fields 1 and 3 are listed in Permit Condition 2.** Also, this permit shall expire on **December 31, 2019**. An application for permit renewal and your septage application logs should be submitted at least ninety (90) days prior to the expiration of your permit.

Please 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 this permit 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-67-12.**"

Sincerely,

Chester R. Cobb, Soil Scientist
Division of Waste Management, NCDEQ

Enclosures

cc: Central Files
William and Carolyn Lankas, Landowners
Onslow 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
1646 Mail Service Center, Raleigh, NC 27699-1646



I. Site and Operator Information

1. Applicant JODY L. THOMPSON T-N-T ENTERPRISES
Address 1811 NC HIGHWAY 172 P.O. BOX 1005
SNEADS FERRY, NC 28460
Phone 910-327-2556 910-327-2381

FIRM NAME IS T-N-T SEPTIC SERVICE

2. Contact person for site operation (if different from applicant): SAME
Title or position Phone Address

3. Landowner WILLIAM GARY LANKAS, SR.
Address 2145 HWY 172
SNEADS FERRY, NC 28460

4. Site Location: County ONslow State Road Number NC HWY 172
Directions to site: FROM WILMINGTON TAKE HWY 17N THRU HOLLY RIDGE THEN TAKE RIGHT ON HIGHWAY 172, GO THRU TRAFFIC LIGHT APPROXIMATELY 3/4 MILE ON LEFT

5. Indicate whether request is: new renewal XXX modification

For a permit renewal or modification, provide the following information:
Existing site permit number: SLAS 67-12 permit expiration date: 12-15-14

6. Number of acres meeting the requirements of the N.C. Septage Management Rules: 13.1 acres.

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 ATTACHED*

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
2. Soil Erosion and Runoff Control Plan *ATTACHED*
3. Alternative plan for disposal (detention facility permit number or wastewater treatment plant authorization): SDTF 67-12, WWTP AUTHORIZATION FORM ATTACHED
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 XXX
 - (d) Commercial / Industrial septage XXX
5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): LIME STABILIZATION DOMESTIC SEPTAGE WILL HAVE PH12 FOR 30 MIN AND DOMESTIC SEPTAGE MIXED WITH COMMERCIAL OR GREASE SEPTAGE RAISED TO PH12 FOR 2 HOURS
6. Proposed method of applying septage to land, including septage distribution plan if required * (use additional paper to explain if necessary): APPLICATIONS TO BE SPREAD OVER CERTAIN PERMITTED AREA ON LAND APPLICATION SITE FROM MOVING PUMPER TRUCK USING AIR VALVE FOR DISCHARGE AND SPREADER
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): ENDANGERED SPECIES LAW DOES NOT APPLY SINCE LAND APPLICATION SITE IN ENTIRETY IS AGRICULTURE

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***

JODY L THOMPSON

 Printname

SEPTEMBER 13, 2014

 Date

OWNER

 Title

Note: This application will not be reviewed until all parts of the application are complete.
 * Refer to Section .0837(e) of the N.C. Septage Management Rules.
 ** Refer to Section .0837(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
1646 Mail Service Center, Raleigh, NC 27699-1646

WILLIAM GARY LANKAS, SR.

I, **& CAROLYN P. LANKAS** (name of site owner) hereby certify that I am the owner of

20.08 acres of land located ADJOINING 2145 HWY 172 SNEADS FERRY
765-81 765-83
and identified by BK 1350 PG 204 BK 820 PG 159 (book and page of recorded deed
or tax map parcel) and that I agree to allow JODY L. THOMPSON
T-N-T ENTERPRISES (name of site
operator) to use said land for septage land application for a period of 5 YRS TO INDEFINITE (length
of time), beginning DECEMBER 31, 2014 (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 CAROLYN P. LANKAS

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

Signature of landowner

Date

12/31/14

Signature of landowner

Date

12/31/14

Sworn to and subscribed before me this 31 day of December, 20 14.

Danielle Norris
(Notary Public)

My Commission expires: Nov. 29, 2019

(OFFICIAL SEAL)

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

** As required by Rule .0843

Danielle Norris
Notary Public
Onslow County
State Of North Carolina

Cobb, Chester

From: Melissa Thompson <t-n-t@embarqmail.com>
Sent: Tuesday, February 23, 2016 3:21 PM
To: Cobb, Chester
Subject: Re: Permit Renewal for SLAS-67-12
Attachments: 2014 Authorization 001.tif

Importance: High

Good Afternoon. I have attached a copy of the Landowner Authorization form that is dated from December 2014. I also, submitted this with our 2015 & 2016 firm annual permits. Is it sufficient for permit renewal or do you still need another one? Please let me know.

Thanks
Melissa

-----Original Message-----

From: [Cobb, Chester](#)
Date: 2/23/2016 2:46:58 PM
To: t-n-t@embarqmail.com
Subject: Permit Renewal for SLAS-67-12

Ms. Thompson,

Please discard the landowner authorization form that I attached in the previous email and use the one that I have attached to this email. There is a missing blank in that form. If you have any questions, please contact me.

Thanks,

Chester

Chester R. Cobb

2003 AMENDMENT

NUTRIENT MANAGEMENT PLAN (NMP)

AND

EROSION / RUNOFF CONTROL PLAN (ERCPC)

TO SERVE

NEW SNEADS FERRY SOLID WASTE LAND
APPLICATION SITE (Gary's Auto Site)

FOR

TNT SEPTIC SERVICES

PREPARED BY
WAYNE RAGLAND
JULY 9, 2003



July 9, 2003

Purpose :

The purpose of this report is to provide compliance with updated regulatory performance standards. Specific performance standards requested includes (1) increasing harvesting of the bermuda grass crop to at least 3 times per year or upon reaching a uniform height of 12" to 15", which ever comes first ; (2) establish a minimum crop coverage requirement of 80% with the exclusion of weed species as part of the crop coverage requirements; (3) establish minimum crop reestablishment specifications when the coverage is less than 80% and ; (4) establish a maximum monthly septage application rate in conformance with standardized nutrient management plans.

Existing Site Conditions :

My understanding of the present circumstances is that (1) fields 1A (2.9 acres) and 2A (5.1 acres) were operational and functioning by the end of July 2002 ; (2) that the crop enlargements (300' to 150' buffer requirements are complete and now functional so that field 1A has been converted to field 1 (3.6 acres) and field 2A has been converted to field 2 (6.3 acres) and ; (3) field 3 has been seeded and has a bermuda crop growing on it BUT that it has not received approval yet based on weed competition and a question as to whether it presently has > 80% crop coverage. Based on these conditions, the site can be approved for 495,000 gallons of septage per year but will not be approved for 655,000 gallons per year until final inspection approval is obtained on field 3.

To sustain the thick vegetated buffers that perimeter the proposed fields, do not clear outside the field limits or on slopes that exceed 8% except in the areas designated for the storage facility, access paths and brush storage areas.

The extensive subsurface remains of small roots, bush stumps and recently scarified land surface will result in extensive sprouting of vegetation that will be competing with the bermuda grass crop. Weed control by mowing and/or pre-emergence herbicides will be critical to establishing the fullest coverage by the warm season crop in the first several years. The brands, types and rates of pre-emergence herbicides should be established by consulting with the local agriculture extension office.

No significant water erosion problems are presently evident on the site. Where rill erosion may become evident, those areas should be overseeded and lightly mulched (< 50% land surface shaded) with the crop residue harvests for the first several years or until a thorough crop coverage is established.

Initial Considerations :

The following considerations and assumptions are used as the primary guide in developing this NMP. The traditional purpose of a "nutrient management plan" is the planning of a balanced plant nutrient application / consumption program with other management methods to maximize crop yields while minimizing long and short term cost of commercial soil additives.

The traditional purpose of the ERCP is to minimize long term cost by minimizing depletion of the soil resource. The ERCP is typically and will in this case be considered an integral part of the NMP. The primary purpose of the ERCP on a septage disposal site can be interpreted as a mandate to protect

July 9, 2003

adjacent properties, streams and ground water from direct contamination and other potential adverse impacts.

The goal of maximum long term protection of environmental quality and stability must be emphasized for management of any waste treatment and disposal system. To accomplish this goal, nutrient removal and therefore crop removal from the fields must be emphasized after a thorough coverage is established. The format specified by the Division of Solid Waste sample form C:SEPTAGE/FORMS/NMP-BER.DOC will be used as a general guide for preparation of this plan. The traditional agricultural "best management practices" (BMP's) for NMP's will also be used in the most practical manner available and is addressed in more detail in the ERCP portion of this plan.

NUTRIENT MANAGEMENT PLAN (NMP)

A. General Information :

1. Periodic sampling (at least 1 / year) of the septage will be conducted for waste analysis.

2. PHASE 1

Field #1A contains approximately 2.9 acres,

Field #2A contains approximately 5.1 acres,

PHASE 2 at completion

Field 1 contains approximately 3.6 acres

Field 2 contains approximately 6.3 acres

Field 3 contains approximately 3.2 acres

3. The dominant soil series at this site is a mosaic of Onslow, Norfolk and Marvyn, with a significant association of arenic and grossarenic taxadjuncts derived by aeolian sand cover on some parts of the ridges.

4. Septage will not be applied where and when the site is untrafficable. (Untrafficable is defined as soil that will allow a loaded truck to leave a depression in sod greater than 3 inches in depth).

5. Nitrogen crop removal will be estimated based upon either 75-80% of average yields listed in AG-439-16 as modified by request during a discussion with Mike Scott on May 14 2003 to account for winter suppression of bermuda grass recovery in the spring season by winter grain cover.¹

6. Septage storage must be provided for the average weekly volume of septage applied to this site or approval for disposal at an alternative site or system (i.e. approved waste treatment plant) must be documented and approved.

¹ See *Production and Utilization of Pastures and Forages in NC*, NCARS # 305, Chamblee & Green and continuing research by Green et al.

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7. Domestic septage will be stabilized at pH 12 with hydrated lime for at least 30 minutes before being applied within the approved field limits.

8. Grease trap septage that exceeds standard domestic septage in strength will be diluted on a 1:1 ratio with domestic septage and stabilized at pH 12 for 2 hours prior to being applied within the approved field limits. No more than 25,000 gallons of grease septage can be applied annually per acre.

B. Alternate plan for disposal in inclement weather & untrafficable soil conditions :

Under separate permit, a tank is now provided at this SLAS site to account for the weekly volume of septage permitted for application at this site. Additional tanks will be provided as needed to assure at least 1 week of storage of the actual annual septage disposal at the site.

C. Crops to be grown and approximate planting and harvesting times :

PHASE 1 : While clearing and establishing bermuda crop coverage on field #3 and portions of field 1 and 2 where reduction of the 300' buffers to 150' buffers are proposed by establishment of the bermuda crop coverage at > 80% coverage prior to release by DWM for application of septage.

1. Field #1A : Cheyenne bermuda must be harvested at least once each year in mid August to mid September after a 30 day resting period of no septage application. Additional harvests should be made as needed each year to control broadleaf weeds, provide mulch stabilization on eroding areas or increase bermuda crop coverage in Phase 2 site limits and Phase 1 bare areas BUT these harvests will not leave the lease site nor be used for feed fodder nor include any 30 day period of non-application of septage. The bermuda will be followed by a winter cover (i.e. rye grass, rye grain, wheat or oats in descending order of preference). If the cool season crop is rye grass, it will be broadcast planted by November first at a seeding rate of 40 pounds per acre. If the cool season crop is rye grain, it will be broadcast planted at a seeding rate of 120 pounds per acre. Harvest is to be by the first of May after a 30 day non-application rest period unless the straw is to be used for erosion control purposes on the same tract but outside the SLAS application limits.
2. Field #2A : Cheyenne bermuda must be harvested at least once each year in mid August to mid September after a 30 day resting period of no septage application. Additional harvests should be made each year as needed to control broadleaf weeds, provide mulch stabilization on eroding areas or increase bermuda crop coverage in Phase 2 site limits and Phase 1 bare areas BUT these harvests will not leave the lease site nor be used for feed fodder nor include any 30 day period of non-application of septage. The bermuda will be followed by a winter cover (i.e. rye grass, rye, wheat or oats in descending order of preference). If the cool season crop is rye grass, it will be broadcast planted by November first at a seeding rate of 40 pounds per acre. If the cool season crop is rye grain, it will be broadcast planted at a seeding rate of 120 pounds per acre. Harvest is to be by the first of May after a 30 day non-application rest period unless the straw is to be used for erosion control purposes on the same tract but outside the SLAS application limits.

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PHASE 2 : Upon completion of clearing and establishing bermuda crop coverage on field #3 and/or portions of field 1 and 2 where reduction of the 300' buffers to 150' buffers are proposed by establishment of the bermuda crop coverage at > 80% coverage prior to release by DWM for application of septage on those fields.

1. Fields #1 and #3 : These two fields will be managed simultaneously to more closely balance the acreage available in field 2. The established bermuda grass will be harvested at least 3 times annually. Harvests will be when the grass uniformly exceeds 12" to 15" of height or on June 15, August 15 and October 15, which ever comes first. The coastal bermuda will be followed by a winter cover crop (i.e. rye grass, rye grain, wheat, or oats in descending order of preference). The use of wheat, a low nitrogen consumption crop, for the nitrogen estimates of realistic yield is solely for the purpose of allowing any winter grain cover be used based on availability and cost. The preferred winter cover is rye grass since it has a relatively high nitrogen consumption rate and can be more easily established by broadcast seeding. Rye grass should be broadcast planted by November 01 at a rate of 40 pounds per acre. If the cool season crop is rye grain, it will be broadcast planted at a seeding rate of 120 pounds per acre. The broadcast planting should be preceded by bermuda grass harvesting and application of a spiker aerator. Any of the other winter grains can be planted at rates recommended by the Agricultural Extension Service, but optimal seedling survival usually requires that it be drill planted. The winter cover crop is to be harvested as either hay or straw by April 15 to May 01.
2. Field #2 : These two fields will be managed simultaneously to more closely balance the acreage available in field 2. The established bermuda grass will be harvested at least 3 times annually. Harvests will be when the grass uniformly exceeds 12" to 15" of height or on June 15, August 15 and October 15, which ever comes first. The coastal bermuda will be followed by a winter cover crop (i.e. rye grass, rye grain, wheat, or oats in descending order of preference). The use of wheat, a low nitrogen consumption crop, for the nitrogen estimates of realistic yield is solely for the purpose of allowing any winter grain cover be used based on availability and cost. The preferred winter cover is rye grass since it has a relatively high nitrogen consumption rate and can be more easily established by broadcast seeding. Rye grass should be broadcast planted by November 01 at a rate of 40 pounds per acre. If the cool season crop is rye grain, it will be broadcast planted at a seeding rate of 120 pounds per acre. The broadcast planting should be preceded by bermuda grass harvesting and application of a spiker aerator. Any of the other winter grains can be planted at rates recommended by the Agricultural Extension Service, but optimal seedling survival usually requires that it be drill planted. The winter cover crop is to be harvested as either hay or straw by April 15 to May 01.

CROP NOTES:

- 1) A crop MUST be established within 30 days of any application of septage.
- 2) NO disking of the fields is to occur after a crop is established.
- 3) If the crop harvest will be used as feed for livestock, the harvest must be at least 30 DAYS AFTER the last septage application to the crop. Harvest must therefore be at staggered time intervals for the separate fields to provide a harvest with at least a 30 day rest period on one field

July 9, 2003

while simultaneously providing a crop that is still available for septage application on the remaining field(s). Since this introduces extreme fluctuations in availability for septage disposal based solely upon upon a market for hay that maybe no longer economically tenable for most septage sites, crop removal for straw or any other legal use that does not require a 30 day septage rest period is now commonly considered. Please note that use for straw may be limited to bales that are stored in dry aerated conditions for a minimum 30, 120 or 365 days, depending upon the possible exposure risk to the public at the location it may be used. The hay or straw harvest MUST be removed from the approved site application limits

- 4) Crops MUST establish and maintain a cover of at least 80%, not including any weed species that may displace the crop species cover. The winter crop cover with less than 80% crop will be broad cast reseeded with rye grass at 15 pounds per acre. The summer crop cover must also be reestablished in areas with less⁴ than 80% coverage of bermuda grass. Reestablishment of bermuda grass will be by seeding Cheyenne at 5 pounds per acre. Areas that continue to be persistently bare of the desired crop may have to be removed from the permitted field limits.
- 5) The 5 year period of at least one harvest of bermuda per year is based on the possible need for the entirety of the first lease period of 5 years being required to establish the crop uniformly over the entirety of the Phase 1 and Phase 2. This is a new site with some deeper sands over the sandy clay loam subsoils which can be subject to significant drought stress. Competing weeds and other factors could also reduce the effectiveness in establishing the full bermuda crop coverage, especially in the 300' to 150' buffer reduction areas where, unlike the Phase 1 limits, the septage application can not occur until AFTER the crop is established at > 80% approved coverage. All approved bermuda grass coverage areas MUST be harvested at least 3 times per year.

D. Nitrogen needs for the crops proposed : (see item A. 5 for computation assumptions)

R. Y. E. = Realistic Yield Expectations

N App. Rate = Suggested N application rate based on R. Y. E. for soil/site conditions.

<u>Crop</u>	<u>R. Y. E.</u>	<u>N App. Rate</u>	<u>lbs N/acre</u>
Cheyenne Bermuda (hay) ²	5.0 tons/acre x	50 lbs N/dry ton =	250
Wheat (grain & straw)	55 bu/acre x	0.93 lbs N/bushel & ton =	70
		<u>Total</u>	<u>320.</u>

The computed maximum waste application rate based solely upon nitrogen consumption by coastal bermuda = $250 / .0026 = 96,154$, which exceeds the standard maximum application rate of 50,000 gallons per acre per year. The computed maximum waste application rate based solely upon nitrogen consumption by wheat = $70 / .0026 = 26,923$ gallons per acre per year so that rye, oats and rye grass may be used as an alternate to winter wheat since they utilizes at least as much nitrogen as wheat.

² Per May 14, 2003 discussion with Mike Scott, offset amount to account for winter cover suppression of bermuda grass recovery in spring growth.

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E. Maximum seasonal application rates for designated fields. These following rates are based on the crops and yields specified in Item C. above. LOW is based on not exceeding 5000 gallons per acre, MEDIUM is based on not exceeding 10000 gallons per acre and HIGH is based on not exceeding 15000 gallons per acre for THAT MONTH.

PHASE 1 :

Month	Field #1A, acres	Field #2A, acres	Field #3, acres	Subtotals
	2.9	5.1	3.2	
January	LOW	LOW	0	40000 G max
February	LOW	LOW	0	40000 G max
March	MEDIUM	MEDIUM	0	80000 G max
April	HIGH	HIGH	0	120000 G max
May	MEDIUM	MEDIUM	0	80000 G max
April	HIGH	HIGH	0	120000 G max
April	HIGH	HIGH	0	120000 G max
August	MEDIUM	MEDIUM	0	80000 G max
September	MEDIUM	MEDIUM	0	80000 G max
October	LOW	LOW	0	40000 G max
November	LOW	LOW	0	40000 G max
December	LOW	LOW	0	40000 G max
TOTALS	145000/field	255000/field	0/field	400000 G max

PHASE 2 :

Month	Field #1, acres	Field #2, acres	Field #3, acres	Subtotals
	3.6	6.3	3.2	
January	LOW	LOW	LOW	65500 G max
February	LOW	LOW	LOW	65500 G max
March	MEDIUM	MEDIUM	MEDIUM	131000 G max
April	HIGH	HIGH	HIGH	196500 G max
May	MEDIUM	MEDIUM	MEDIUM	131000 G max
April	HIGH	HIGH	HIGH	196500 G max
April	HIGH	HIGH	HIGH	196500 G max
August	MEDIUM	MEDIUM	MEDIUM	131000 G max
September	MEDIUM	MEDIUM	MEDIUM	131000 G max
October	LOW	LOW	LOW	65500 G max
November	LOW	LOW	LOW	65500 G max
December	LOW	LOW	LOW	65500 G max
TOTALS	180000/field	315000/field	160,000/field	655000 G max

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NOTE : Total Phase 1 size is 8.0 acres and Phase 2 total size at completion is 13.1 acres. NO applications will be made on the remainder of field 1, the remainder of field 2, and all of field 3 until Phase 2 crops are established on each field addendum and State inspection approval is obtained. The monthly quantities & totals shown are monthly maximums. Upon conversion from phase 1 status to Phase 2 status on each field (ex. field 1A increases from 2.9 acres to 3.6 acres of field 1), the minimum one harvest per year for bermuda will immediately increase to a minimum of 3 harvests per year. Maximum field and site totals can NOT be exceeded. If all of the septage application was grease pumping, the total quantity would be reduced by 50%. Total septage applications MUST NOT exceed 50,000 gallons per acre per year and MUST NOT exceed the monthly rates specified in the above table. Maximum field and site totals can NOT be exceeded unless the site manager completes training and passes the test to become a certified operator.

F. Harvest and Use Of The Crops :

During Phase 1, both the winter grain cover crop and bermuda will be harvested primarily as straw for seeding or erosion control mulch in areas that are sparsely vegetated including expansion of the bermuda crop on the entirety of the proposed field limits and off the permit site but on the same ownership tracts. Upon completion of Phase 2, crop harvests may be used for straw or hay for livestock food. Use for livestock feed will require non application of septage for 30 days prior to harvest. Straw and other legal uses that does not expose food sources or the public may be harvested without a 30 day rest period but may require dry storage for at least 30 days. In either case, except for those conditions specified for reestablishing a crop where there is less than 80% cover, ALL harvests must be removed from the approved application permit site. Other uses like composting will require permit approval prior to implementing those uses, whether on-site or off-site. At least 3 harvests of the bermuda must be made each year.

G. Application method :

The preceding information is based on septage being applied uniformly for the entire permitted site with a tank truck that provides a uniform outlet dispersal width of at least 48" directly behind the pump truck. NOTE, any application procedure that is not directly behind the truck and covers most of the travel path will require this plan to be revised. Please contact the author immediately if the dispersal method is changed. Septage will be stabilized at pH 12 prior to placement on the fields.

H. Additional Fertility Requirements :

Optimum nitrogen crop uptake will not occur unless other nutrients do not significantly limit the crop growth response. Soil samples should be taken in October-November of each year to determine potential fertility problems. Soil sample boxes, crop data forms and additional assistance is available at the local Onslow County Agriculture Extension Service. If future soil sample analysis indicates a

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significant need for potash or other nutrients by a rating of less than 35 to 40, then 1/2 of the suggested rates of a commercial sources of fertilizer should be applied in successive years until the rating exceeds 35 to 40. Due to the use of lime to stabilize the septage before application, no recommended lime should be applied unless the pH is less than 5.0 but even then at no more than 1/2 of the recommended rate. Repeated results of a topsoil pH of 7.0 or greater may require the use of sulfur or other fertilizer sources that will decrease the pH and increase active acidity in the topsoil.

Fertilizer applications should be made on buffer areas based on soil sampling of those specific areas with stressed or sparse vegetative cover that is not sufficient for controlling the erosion potential in those areas. Only 50% of the recommended application of nitrogen but 100% of the other nutrients should be applied to the buffer areas. The buffer areas that are grass and not in thick natural vegetation may need to be mowed as needed to control broadleaf weed competition and to maximize the grass cover on the buffer areas.

EROSION & RUNOFF CONTROL PLAN (ERCP)

K. Erosion & Runoff Control Plan Review of Standard Best Management Practices (BMP's):

It is intended that nutrient management plan conform with standard agricultural nutrient best management practices (BMP's) to the maximum extent practical, I offer the following elucidation of the standard BMP's as most applicable to these specific site conditions.

Crop Management Plan Standard BMP's :

1) Obtain soil fertility tests based on the specific crops proposed. Soil fertility sampling needs to be taken at least annually on each field and any area with less than 80% vegetative cover. Sample boxes, forms and additional assistance is available at the local Agricultural Extension Service office.

2) Set realistic goals for yields. The practical best yield expectations for most waste disposal sites is uniform crop survival and health, soil stability and sufficient growth to optimize realistic nitrogen removal expectations. Noxious and dangerous weed growth control is needed for hay products fed directly to beef cattle and horses (ie. sand spurs, cockleburrs, endophyte fescue etc).

3) Adherence to soil test recommendations. This management principle is especially critical relative to recommended liming rates and any specific nutrient with a rating of less than "30" on the soil sample reports. Applications of specific commercial fertilizers should be made for those nutrients not typically found in sufficient quantities in the septage to assure the maximum the long term uptake of nitrogen and other nutrients derived from the septage.

4) Apply fertilizers correctly and time nitrogen applications correctly. The timing of nitrogen application is not subject to significant control due to the purpose of the application of septage on land application sites. Nitrogen is presently the most significant nutrient being managed on septage land application sites and must be controlled as much as possible by the uniform application of the materials,

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optimum establishment of crops that provide nitrogen uptake and uniform persistent harvesting to remove the excess nutrients from the land application site.

5) Use "manure" sources if available. Since the entire purpose of a septage disposal site is for the purpose of managing a "manure" source, no additional consideration will be given to this standard BMP. NOTE that this does not imply in any manner that any other manure source is approved for disposal at this site, ONLY septage and grease is subject to this permit³.

6) Control erosion and runoff. This aspect of a crop management plan is extremely important in the protection of adjacent lands and public waters. See the following discussion of the standard ERCP BMP's for a more comprehensive review of this subject.

Erosion & Runoff Control Plan (ERCP) Standard BMP's :

1) Maintain a soil cover. At any time of the year (plus or minus 30 days), actively growing crops should be present on the permitted site limits being utilized for septage application. The remainder of the site should be in either existing woods, stabilized roadways or buffer and swale areas stabilized with a vegetative cover. Rill erosion or bare areas on the well drained portions of the site buffers can be stabilized with bermuda hay cropped from the application site and dispersed over the area as a "straw" mulch. Wetter soil areas need to be stabilized with a mixture of bahia and a turf grade tall fescue grass sowed in a 50/50 mixture at 150 pounds per acre.

2) Manage soil surface for maximum infiltration. The only additional recommendation under this category is to travel the same track path each time the dispersal truck applies the septage. Typically 60-75% of compaction reduction of infiltration occurs in the first 2 passes and the minimum soil area impacted by vehicle traffic the better for the infiltration capacity. The travel paths can be partly restored to prior infiltration capacities by using a subsoil ripper on a 3 to 5 year rotation. See Item I Application Method, since this procedure does require the dispersal from behind the truck for the full width of the truck, when and if other dispersal methods are used then this guideline may have to be revised.⁴

3) Maintain vegetation on swales and ditch channels. Upon stabilizing any bare areas with grass, soil samples need to be taken at 3 to 5 year intervals to assure fertility maintenance of those areas. Apply 100% of the recommended rates for all nutrient ratings of 25 or less. Apply 1/2 of the recommended rate for nutrient ratings between 25 & 50. Any rating exceeding 45 to 50 should not receive applications of that nutrient.

4), 5) & 6) Slope field roads toward fields and establish permanent grass cover, shape field edges to detain runoff and establish grass cover, and use windbreaks and conservation tillage. Most of these practices have already been addressed or are in use on the site now or are not applicable to the perennial crop proposed.

7) Establish and maintain vegetated buffer strips along areas where storm water runoff exits fields. This practice is already addressed in the above items.

³ 5/30/02 clarification based on phone consult with Ted Lyon.

⁴ 5/30/02 revision as per phone consult with Ted Lyon.

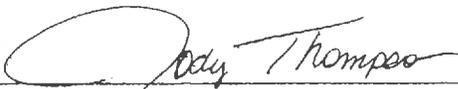
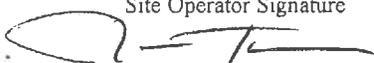
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Soil samples should be taken at least annually and at least 8-12 weeks prior to the Autumn planting date proposed for each field. All nitrogen should come from the septage application but either potassium or magnesium or other nutrients could become growth limiting factors on a site if they are not maintained at sufficient levels. A pH higher than 7.0 can also limit the optimum uptake of nutrients by affecting the crops grown or soil chemistry and should be avoided.

It must be emphasized that a crop management plan is not a static instrument but is only a blueprint for planning optimization for the defined crop use goals. As crop use goals or site conditions change, the management plan must be adjusted and amended to continue optimization of the desired goals. Information sources such as the Agricultural Extension Service should be used on an ongoing and continuous basis.

NOTE that no portion of phase 2 limits can be used for septage disposal, incrementally or as a whole until each increment of crop establishment beyond the initial fields 1A and 2A is approved by the State inspection.

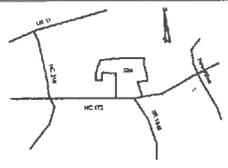
Submitted by :  Date : 7-9-03
Site Operator Signature
 8-29-11
 9-13-14

Plan prepared by : Wayne Ragland Date : July 8, 2003
Licensed Soil Scientist (LSS 1026)
Address : 120 Balsam Road
Jacksonville NC 28546-8508
Phone & fax : 910-347-9036 e-mail : wragland@ec.rr.com

I, Danny Marco Padgett, do hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer in the State of North Carolina. I am hereby certifying that the information shown on this plan is true and correct to the best of my knowledge and belief and that I am not aware of any material misstatements or omissions on this plan.

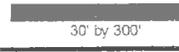
Owner's Declaration
I, William Gary Lenkes, do hereby certify that the information shown on this plan is true and correct to the best of my knowledge and belief and that I am not aware of any material misstatements or omissions on this plan.

Copy of Engineer's Commission Certificate
The copies of the copy of the plan or map, as shown, prepared by me or under my direct supervision, shall be the same as the original plan or map. The copies shall be subject to the same laws and regulations as the original plan or map. The copies shall be subject to the same laws and regulations as the original plan or map. The copies shall be subject to the same laws and regulations as the original plan or map.

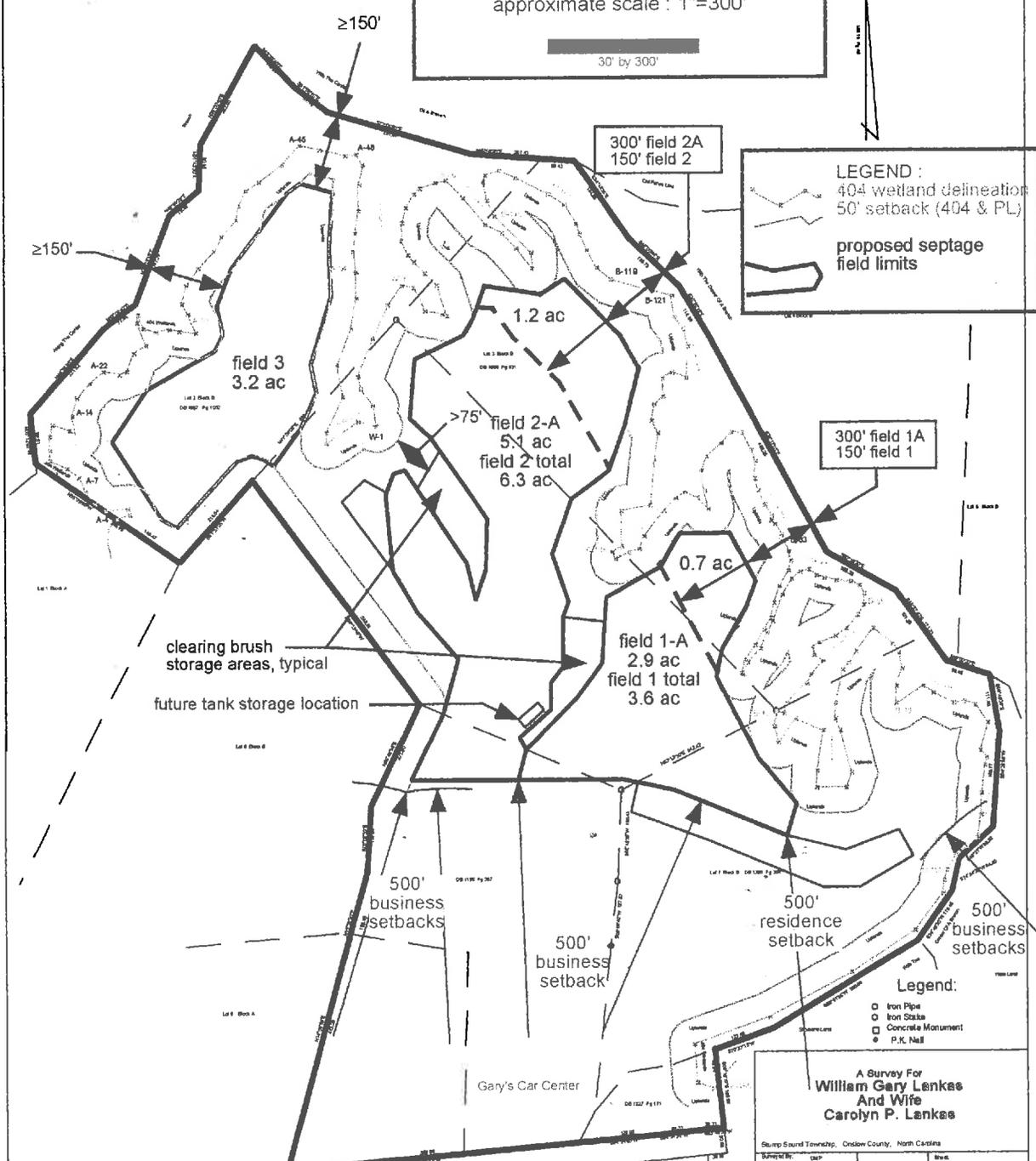


Vicinity Map N.T.S.

**Total Site Limits Plan
& Proposed Septage Field Limits
TNT Septic Service
Gary's Auto Site, Sneads Ferry, NC
Usable Soil, Setbacks, & Field Designations
approximate scale : 1"=300'**



LEGEND :
 404 wetland delineation
 50' setback (404 & PL)
 proposed septage field limits

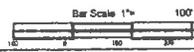


Legend:
 ○ Iron Pipe
 ○ Iron Stake
 ○ Concrete Monument
 ○ P.K. Nail

**A Survey For
William Gary Lenkes
And Wife
Carolyn P. Lenkes**

Surveyed In: 2007		Sheet: 1 of 1	
Drawn By: 307		Field Date:	
Scale: 1"=300'		Printed On:	
Date: 1/15/08		Printed At:	

Danny Marco Padgett, RLS
 89 Village Drive
 Holly Ridge, North Carolina 28455 Tel: 910.727.1987



SEPTAGE LAND APPLICATION LOG

CERTIFICATION

Site Operator: JODY L. THOMPSON T-N-T ENTERPRISES

SLAS Permit #: SLAS 67-12

Site Location: BEHIND 2145 NC HIGHWAY 172 SNEADS
FERRY, NC

(street address for the site or latitude and longitude)

Number of acres permitted: 15

Permitted application rate: 50,000

(gallons septage per acre per year)

Crop(s): CHEYENNE BERMUDA / ABRUZZI RYE/RYE GRAIN

Crop nitrogen requirement(s): SUGGESTED BERMUDA250/RYE70

(pounds nitrogen per acre)

CERTIFICATION:

"I certify, under penalty of law, that the pathogen requirements in (insert either 503.32 (c)(1) or 503.32 (c)(2)) and the vector attraction reduction requirements in (insert 503.33 (b)(9), 503.33 (b)(10) or 503.33 (b)(12)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."



(signature)

9-13-14

(date)