



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

Blu Site Solutions of North Carolina, Inc.
Tom Balaker
5680 Richlands Hwy.
Jacksonville, NC 28540

is hereby permitted to operate Septage Land Application Site with permit # **SLAS-67-10** located on Hwy 24 in Onslow County at approximate position 34.83580° N latitude and -77.52654° 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

2/11/2016

A handwritten signature in blue ink, appearing to read 'Martin A. Gallagher'.

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

CONDITIONS OF OPERATING PERMIT

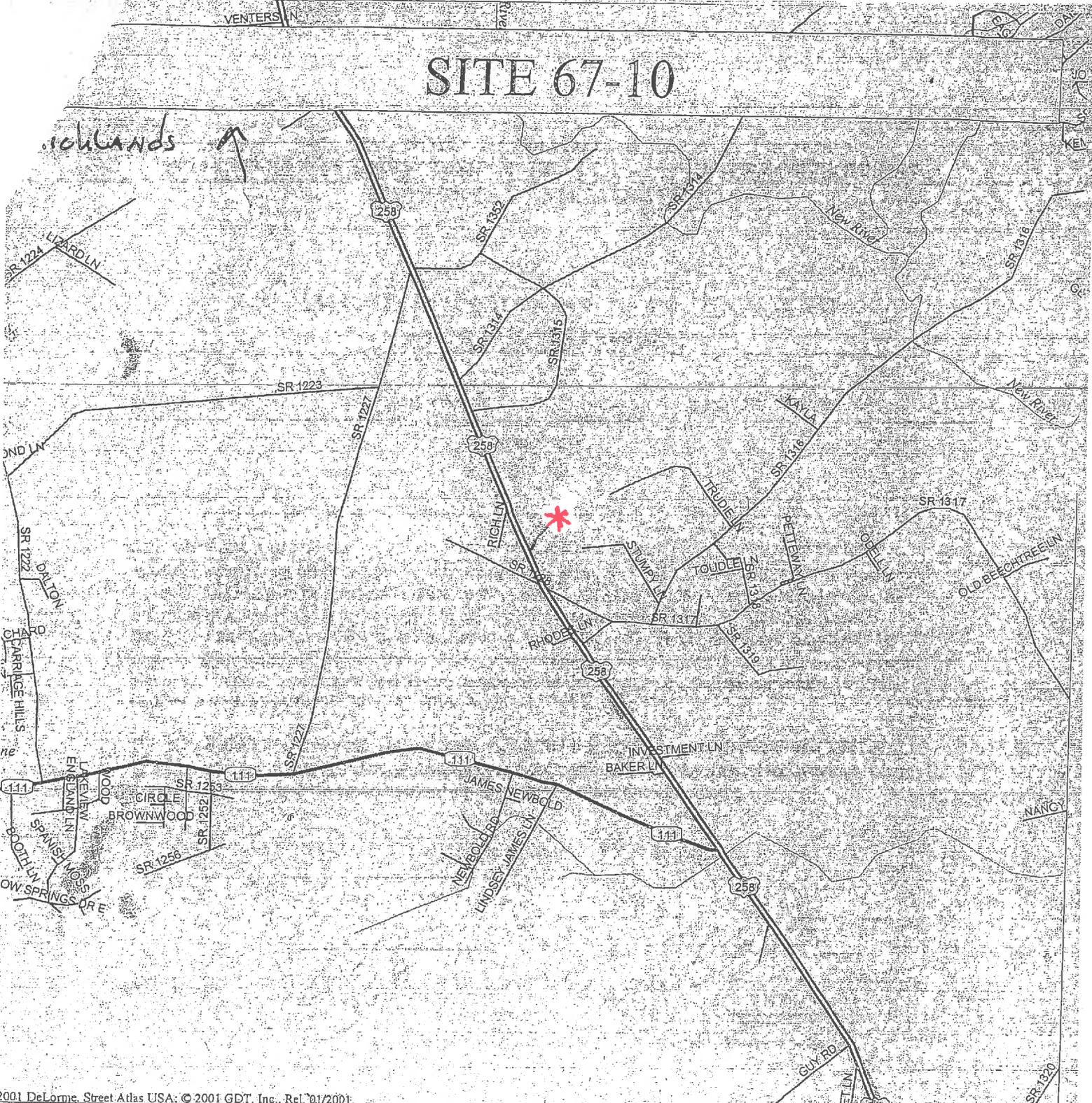
1. This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards of both surface and ground waters.
2. This site shall be operated and maintained in accordance with the nutrient management plan submitted by Tom Balaker and approved by the Division of Waste Management. The 9-acre site shall be divided into two fields known as Field 1 with 4.7 acres and Field 2 with 4.3 acres. Both fields shall be planted in Pearl millet for the summer crop and rye for the winter crop. The planting and harvesting of the crops shall follow the approved nutrient management plan. Areas that fall below 80% in crop coverage shall be replanted as covered in the nutrient management plan. The 30-day waiting period between the last application of septage and the harvest of a crop shall be met by alternating septage applications between the two fields or another permitted septage land application site. 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 Tom Balaker in such a manner as to prevent the migration of wastes off of the designated waste receiving site. A 50-foot vegetative buffer shall be maintained around the perimeter of the permitted area. 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) 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. Grease septage when applied over perennial vegetation shall be diluted as per Rule 15A NCAC 13B .0838 (a) (15).
7. **This site contains approximately 9 acres that are available for land application of septage.** The maximum annual application rate shall be 50,000 gal/ac/yr. At this application rate, a maximum annual volume of 450,000 gallons may be applied evenly across the permitted area. Application amounts to the fields shall not exceed the maximum annual application rate or the monthly application rates listed in the approved nutrient management plan for the site. The maximum annual application rate assumes equal septage distribution, on an annual basis, over the entire permitted area.
8. An approved above ground septage detention system with a minimum design capacity of 9,000 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.
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 March 10, 2019.** 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. 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 Rule 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 feet of any surface water unless specified otherwise.

SITE 67-10

islands



2001 DeLorme, Street Atlas USA; © 2001 GDT, Inc., Rel. 01/2001

Scale 1:31,250 (at center)
2000 Feet

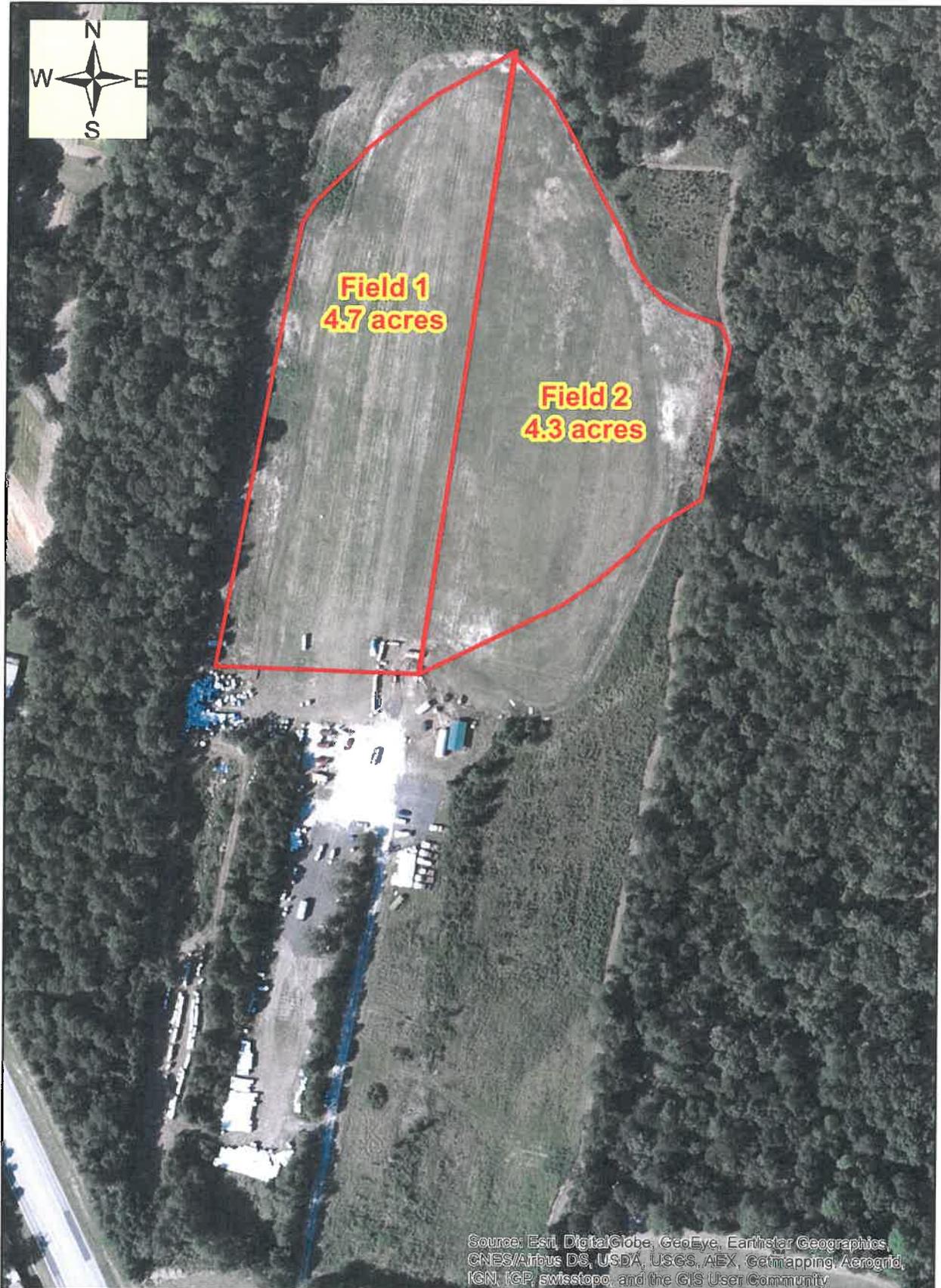
1000 Meters

- Local Road
- State Route
- US Highway
- Population Center
- Land
- Water
- River/Canal
- Intermittent River

JACKSONVILLE



SLAS-67-10



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 = 200 ft

crc, Feb 2016



PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

LINDA CULPEPPER
Director

February 11, 2016

Mr. Tom Balaker
Blu Site Solutions of North Carolina, Inc.
5680 Richlands Hwy.
Jacksonville, NC 28540

**RE: SLAS-67-10 Permit Modification
Blu Site Solutions of North Carolina, Inc.
Hwy 24 in Onslow County**

Dear Mr. Balaker:

The NC Division of Waste Management has reviewed your application to modify the operation of Septage Land Application Site, **Permit # SLAS-67-10**, in Onslow County. Your application has been approved in accordance with NC Septage Management Rules and your modified permit, **SLAS-67-10**, is enclosed. The modified permit includes the name change from Toi Toi of North Carolina, Inc. to Blu Site Solutions of North Carolina, Inc. Also, this permit covers the requested crop change from Coastal bermudagrass overseeded with ryegrass to Pearl millet and rye. The crop change is covered within Permit Condition 2.

Please read all permit conditions carefully. Your nutrient management and soil erosion and runoff control plans you submitted have been included in your Permit. This permit shall expire on **March 10, 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.

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-67-10**."

Sincerely,



Chester R. Cobb, Soil Scientist

Division of Waste Management, NCDEQ

Enclosures

cc: Central Files
Connie Wylie, Soil Scientist
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
401 Oberlin Rd., Ste. 150, Raleigh, NC 27605



I. Site and Operator Information

1. Applicant: Blu Site Solutions of North Carolina, Inc.
Address: 5680 Richlands Hwy, Jacksonville, N.C. 28540
Phone: 910-324-1420

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

3. Landowner: Blu Site Solutions of North Carolina, Inc.
Address: 5680 Richlands Hwy, Jacksonville, N.C. 28540

4. Site Location: County Onslow State Road Number Hwy. 258/NCSR 24
Directions to site: Northwest of SR 1317

5. Indicate whether request is: new renewal X modification X
CRC FOR NAME CHANGE & CROP CHANGE

For a permit renewal or modification, provide the following information:
Existing site permit number: 67-10 permit expiration date: 03-10-19

6. Number of acres meeting the requirements of the NC Septage Management Rules: 8.4 acres.

7. Substances other than septage or grease trap pumpings previously disposed of on site:
(a) None X, 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.

9. Attach site evaluation report, including aerial photograph and soil analysis results, unless the Division prepared the report.

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

II. Site Management Information:

The following information shall be included with the application form:

- 1. Nutrient Management Plan - See 2014 Amendment
2. Soil Erosion and Runoff Control Plan - See 2014 Amendment

3. Alternative plan for disposal (detention facility permit number or wastewater treatment plant authorization): SLAS 67-09
Greenville Utilities WWTP
4. Types of septage proposed to be discharged at the site (check all that apply):
 (a) Domestic septage pumped from septic tanks 9 %
 (b) Grease trap pumpings 1 %
 (c) Portable toilet waste 90 %
 (d) Commercial/Industrial Septage 0 %
5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): Septage will be lime stabilized to ph 12 for 30 minutes prior to land application. Grease trap pumpings or septage mixed with grease trap pumpings will be lime stabilized to ph 12 for at least 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): Septage will be sprayed from a moving truck with a spray path of at least 456" in the assigned field for that month.
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): Site is located on agricultural land.

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.

Tom Balaha
 Signature
Tom Balaha
 Print

12-22-15
 Date
Farm Supervisor
 Title

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

* Refer to Section .0821(e) of the NC Septage Management Rules.

** Refer to Section .0821 (g) of the NC Septage Management Rules.

***Signature of company official required.

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**ARTICLES OF AMENDMENT
OF THE ARTICLES OF INCORPORATION
OF TOI TOI OF NORTH CAROLINA, INC.**

1.

The name of the corporation is Toi Toi of North Carolina, Inc.

2.

Article 1 of the Articles of Incorporation of Toi Toi of North Carolina, Inc. is amended to read in its entirety as follows:

The name of the Corporation is Blu Site Solutions of North Carolina, Inc.

3.

The date of the foregoing amendment's adoption was June 15, 2015.

4.

The foregoing amendment was approved by the shareholders of the corporation as required by the North Carolina Business Corporation Act.

IN WITNESS WHEREOF, the undersigned has caused these Articles of Amendment to be duly executed as of June 15, 2015.



Renate Pinkernelle, President

Septage Nutrient Management Plan
2014 update for 2016
Blu Site Solutions of North Carolina Inc.
SLAS 67-10 Richlands Hwy. Site
Onslow County, NC

Contact: Tom Balaker
Jacksonville, NC 28540
910-376-0683

Purpose: The purpose of this document is to update the septage nutrient management plan of SLAS #67-10 and to provide updated compliance with state regulations.

Existing Site Conditions: The relevant property lines, approved site limits, natural geographic conditions and known site improvements are incorporated from the prior plan.

A. General Information:

1. Septage will be sampled at least three (3) times per year for waste analysis. These samples will be used to monitor nutrient loadings. The recommended procedure for collecting the samples is as follows:
 - a) Make sure the septage has been stabilized at a pH of 12 with hydrated lime for 30 minutes (domestic septage) or for 2 hours (grease trap septage).
 - b) Set out some pans in the path where the truck will be disposing the septage. Plastic pans are recommended. Do not use zinc plated or galvanized metal pans; the metals content will be distorted.
 - c) Mix contents of 3-4 pans and fill a 16-20 ounce plastic bottle 3/4 full. Squeeze out some of the excess air and label the bottle with you name and septage sample identification.
 - d) Complete the NCDA&CS Septage Sample Cover Sheet and bring it with the sample to the Cooperative Extension office.

If samples are collected over a couple of days or from different truckloads, it makes for a more representative sample; however, samples should be kept cool. Only one sample is needed, as long as it is mixed from several different sub-samples.

Bring the samples to the Extension Office for forwarding to the NCDA&CS lab.

Please use a check made out to NCDA&CS (\$8.00 per sample). Bottles need to be clearly labeled as a household -lime stabilized- septage sample (waste code MLS). For extra security, place the bottle in a plastic freezer bag. The form and check can be put in an envelope and placed in the bag with the bottle.

2. An annual soil sampling of each numbered field will be conducted and the results maintained on file. Pay particular attention to: **soil pH and manganese index.**
3. Total available area for septage application on this site is 9.0 acres. This is divided into two smaller fields:
 - a) Field #1 contains approximately 4.7 acres
 - b) Field #2 contains approximately 4.3 acres

The dominant soil series at this site is Baymeade fine sand (BaB) with a small portion of Norfolk loamy fine sand (NoB), and a very small corner of Marvyn loamy fine sand (MaC). These are according to the Onslow Co. Soil Survey (sheets 13 and 18), and the web soil survey. A map is attached.

4. Septage will not be applied when and where 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. It also will not be applied when the field is flooded, frozen, or snow covered.
5. Grease septage is to be diluted at least 1:1 from its original concentration when pumped with domestic septage or water. Grease septage applications shall not exceed 25,000 gallons/acre/yr.
6. Septage storage shall be provided to account for the average volume of septage pumped per week, or an alternative plan, such as disposal at a waste treatment plant, should be in place. Storage tanks are currently located at the site.
7. If the forage is to be grazed, the nitrogen recommendations are to be reduced by 25% for each applicable field.

B. Crops to be grown and approximate planting and harvest times:

1. The operator desires to change the summer crop to pearl millet in both Field #1 & #2, and grow cereal rye during the winter. Prior to planting the pearl millet, kill any residual rye, Bermuda grass, and weeds with glyphosate. Pearl millet establishes best at a pH of 6.0 to 6.5 (may start yellowing at pH above 6.2). Use the soil test report to determine if lime, phosphorus and potassium additions are needed. Manganese sulfate may also be needed.

The November 2013 soil samples for the site indicate a pH of 7.3-7.4, and the \$ ad & pH are indicated under manganese. From the NCDA notes ([http://www.ncagr.gov/agronomi/pdffiles/st\\$note.pdf](http://www.ncagr.gov/agronomi/pdffiles/st$note.pdf)), lowering the soil pH through sulfur application would be beneficial. The use of magnesium sulfate will also help (<http://www.soil/ncsu.edu/publications/Soilfacts/AG-439-18/AG-439-18.pdf>).

The following seeding rates are recommended to meet the realistic yield expectation (RYE) and appropriate stand densities. Under adverse conditions, a much lower percentage of the seeds will establish successfully. For that reason, many seeds are needed to obtain a satisfactory stand. During drought and other adverse conditions, reseeding may be necessary:

Cereal rye: 2.5-3 bu/acre (160 lbs per acre broadcast, 140 lbs per acre drilled). Drilled is preferred. If seed is broadcast, cultipacking is recommended to improve seed/soil contact and increase survival rate, especially during dry weather.

Pearl millet: 20-25 lbs/acre if broadcast, or 15-20 lbs/acre if drilled (preferred method)

In Onslow, the prime planting date for pearl millet are May 1 - 15, although it can extend into June (see *Planting Guide for Forage Crops in NC*:

<http://edgecombe.ces.ncsu.edu/files/library/33/A.%20Planting%20Guide%20for%20Forage%20Crops%20in%20NC.pdf>)

Thirty pounds of nitrogen per acre can be applied at planting. Make cuttings when the stand reaches 15-inches tall, but do not cut the plants shorter than 6-inches or significant die-off may occur. The first cutting of pearl millet is usually a good yield; however, yield and stand may decline during the summer. Replanting can be done in mid-summer to improve stand density (maintain the required 80% coverage) and maintain application window. Contact Tom Hall, NCDA&CS Regional Agronomist, for stand health questions (324-9924).

Overseeding with cereal Rye will occur near mid-October of each year, at a rate of approximately 2.5 bu/acre to 3 bu/acre. The cereal Rye will be harvested as hay, preferably by late April to early May.

2. Crop rotation table:

Field	Crop	Season
1	Cereal Rye	mid October -- April
	Pearl Millet	May--September
2	Cereal Rye	mid October -- April
	Pearl Millet	May--September

3. Weed control

If weeds become a problem, contact our technical specialist for assistance and/or the most recent *North Carolina Agricultural Chemicals Manual* for herbicides to control specific weeds. Weed control for the various crops is very weed specific. Please consult one of your local advisors for proper identification and control recommendations.

C. Nitrogen needs for crops grown:

RYE = Realistic Yield Expectation for soil type (majority of each field is Baymeade)

N App. Rate = Suggested nitrogen application rate

Field	Crop (as hay)	RYE tons/acre	N App. Rate lbs/dry ton	Total lbs N/ac	*Gal/ac/yr	Adjusted Gal/ac/yr	Actual lbs N/ac
1 & 2	Cereal rye	1.0	49	49	18,846	18,000	47

Pearl millet 4.4 54 237 91,154 32,000 83

* This column represents the number of gallons needed to meet the total nitrogen needs of the crops. The maximum permitted application is 50,000 gal/acre/yr, with a maximum winter monthly application of 5,000 gal/acre.

Crops will be harvested as hay and removed from site for feed, bedding, or other approved uses. The **Adjusted gal/acre/year** column represents what can be applied so as not to exceed the maximum permitted application rate of 50,000 gal/acre/yr.

Crops will be harvested as hay and removed from site for feed, bedding, or other approved uses. The Adjusted gal/acre/year column represents what can be applied so as not to exceed the maximum permitted application rate of 50,000 gal/acre/yr.

Because the nitrogen needs will not be met, commercial nitrogen fertilizer can be used IF NEEDED. A Plant Tissue Analysis sample can be collected to determine if the plants are deficient. If fertilizer is used, it is important that the crop N requirements not be exceeded! The pearl millet can have up to 154 lbs of commercial N. All such additions are to be documented.

D. Monthly/yearly application rate estimates in gallons:

Crop	Maximum Uptake Period
Pearl millet (hay)	May-August
Cereal rye (hay)	February-April

As shown in the above table, the cereal rye has its maximum nutrient uptake during February through April. There is some uptake, however, as the crop first grows and becomes established. It is generally recommended that 1/3 of the nutrients be applied during the lower growth months (November - January) and the remaining 2/3 be applied during February - April.

It is understood that homeowner pumping requests are greatest during the winter months. The application recommendations in the table below, therefore, are given as the permissible amount WEATHER, CROP, and FIELD CONDITIONS PERMITTING. In order to get more customers to request summer pumping, you may want to offer a "price incentive" (i.e, have a summer price that is less than the winter price). This would reduce your risk of either an application or crop cover violation. Again, this is just a recommendation.

Month	Field 1 & 2 application per acre Pearl Millet & Rye
January*	low
February*	low
March*	medium
April	medium
May	medium
June	high
July	high
August**	low/medium
September**	low/medium

October	medium
November*	low
December*	low

Low = up to 5,000 gallons; medium = up to 10,000 gallons; high = up to 15,000 gallons

* These months can have wetter soil conditions than during the other months. It is exceedingly important that the applications be applied to the largest surface area practicable, so as not to have any ponding or runoff, and to minimize untrafficable areas.

** Application volume will depend on health and growth stage of crop.

Note: Application dates are approximate and subject to adjustments due to harvesting (30 day rest periods) and weather. They are given as an application guide.

It is understood that weather conditions can cause the Winter crop to mature earlier or later than the specified field harvest date. Regulations mandate that a crop be planted or break dormancy within 30 days of any application of septage. No crop can be harvested until at least 30 days after the last septage application to that crop if it is to be used as forage or bedding. Harvests should, therefore, be staggered at intervals among the fields such that at least one is available for application while the others go through the 30 day rest period.

E. Application method:

The preceding information is based on septage being **evenly applied** over the entire permitted site. For this facility, septage will be applied using a pumper truck with a splash plate, when the crops are of suitable height and the field is trafficable. If the entire field is not covered each time, markers or some form of consistent rotation are needed to ensure that one portion of the field is not more heavily loaded than other portions of the field. This can be accomplished by dividing each field into sub-fields (ex.: 1a, 1b, 1c, etc.).

An application record for each sub-field is highly recommended. Waste record forms SLUR-1 and SLUR-2 can be used for record keeping. These and additional forms are available from the local Cooperative Extension Office or from DENR Wilmington Regional Office.

F. Additional fertility requirements:

Optimum nitrogen uptake will not occur if the concentrations of other nutrients limit the crop growth. Septage does not provide adequate supplies of all necessary nutrients over a prolonged period of time; so periodic supplements may be required. These maintenance applications should be based on annual soil test analyses. Soil samples should be taken at a consistent time each year, preferably in the Fall. **DO NOT FOLLOW THE NITROGEN RECOMMENDATION FROM THE SOIL TEST REPORT!** You are to use the nitrogen amounts given in this waste application plan.

A separate soil sample should be collected for the buffer areas. Commercial fertilizer applications to the buffers are to be based on the soil sample results. If you have questions, feel free to ask a Certified Waste Management Plan person in the local Cooperative Extension or Soil and Water Conservation offices.

G. Harvest of the crops and their use:

1. The Pearl Millet will be cut and baled as hay. Allow to grow to roughly 15 inches tall between cuttings. Do not cut shorter than 6 inches tall.
2. The Rye will be cut and baled as hay during April to early May. Kill any residual rye and weeds with glyphosate prior to planting the millet.
3. The baled crops will be transported off site and used as livestock feed or other approved uses.
4. A 30-day waiting period must be observed between the last application of septage and harvest if the material is to be used as livestock feed or bedding; therefore, an application rotation will need to be established among the fields. Record keeping will be an important factor in documenting proper application. This cycle will continue until your next plan update or other instructions from either DENR or a Certified Waste Management Plan person. Any changes are to be put into writing, placed in your plan file, and copies given to the appropriate agencies.

H. Records required to be kept for five years:

1. Soil tests are to be done annually and the reports kept. Although nitrogen and phosphorus are the main nutrients of interest, some micronutrients are also of concern. Check your soil test results and compare them to the following table:

Pollutant	Maximum Cumulative Loading	Equivalent Soil Test
	Rate	Report Value
	(kilograms per hectare)	(parts per million)
Zinc	2800	1400
Cooper	1500	750
Cadmium	39	19.5
Nickel	420	210
Lead	300	150
Selenium	100	50
Arsenic	41	20.5
Mercury	17	8.5

2. Septage pumping log.
3. Septage land application log.
4. Septage land application log cover sheet with signed certification.

The NC Septage Management Rules (15A NCAC 13B .0822(e)) and the Federal Rules (40 CRF 503.17(b)) require that specific information be recorded and maintained for septage land application sites. Incomplete record keeping may result in penalties. If you do not include the required records your site may not be re-permitted. If you have more than one site and each site has a separate permit number, the records for each must be maintained separately.

One **Septage Land Application Log Cover Sheet** is to be attached to each set of log forms submitted to DENR. The **Septage Pumping Log** (modified SLUR-1) is used to record septage pumped by the firm. The **Septage Land Application Log** (modified SLUR-2) is used to record how the septage is treated and land applied. All blocks are to be completed.

One Septage Land Application Log is to be kept for each field and crop. Your site would have a minimum of four log forms for each year:

- Field #1 Rye,
- Field #1 Pearl Millet,
- Field #2 Rye,
- Field #2 Pearl Millet.

If the fields are sub-divided for applications, additional forms may be used. Although not required, crop harvest records are strongly recommended.

Questions regarding the regulations? Contact Chester Cobb (Composting and Land Application Branch) at 919-707-8285.

Soil Erosion and Runoff Control Plan

Natural Resource Conservation Service best management practices (BMPs) are readily available and directly applicable to septage application sites. Some recommended BMPs for this site include:

1. Maintain a vegetative cover. At any time of the year, crops or their residue should be present on the site.
2. Manage soil surface for maximum infiltration. Minimize soil disturbance by drill planting the Winter small grain crop. The Onslow Extension Center has a grain drill available for rent. If soil compaction should become evident (ponding of applied septage), use a subsoiler to loosen the soil and improve infiltration. Field traffic should be kept to a minimum.
3. Maintain vegetation on swales, ditch channels, and all other field exits for storm water runoff. Bermuda grass buffers at least 50 feet wide would be maintained around the site. A 200 foot buffer is to be maintained in areas adjacent to streams. If additional control or screening is needed, contact the Soil & Water Conservation office to see if the site qualifies for Cost Share assistance. They may be able to help you get trees or shrubs.
4. Extra care and control may be needed on those areas with increased slope. If possible, field edges should be shaped to detain runoff.

Nutrient management and erosion control plans are not static instruments; they are blueprints for planning and optimizing the defined crop use goals. As crop use goals or site conditions change, the management plan may need to be amended. Information sources, such as Cooperative Extension or Soil & Water Conservation, should be used on an ongoing basis.

Submitted by: Sam Bullock

Date: 12-22-15

Plan prepared by: _____

Date: _____

Address: Diana M.C. Rashash, PhD EI
North Carolina Cooperative Extension
4024 Richlands Hwy.
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Toi-Toi of North Carolina

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10-07-15

RE: SLAS 67-10

To Whom It May Concern:

This is an amendment to SLAS 67-10 (NMP) Nutrient Management Plan update for 2014.

The crops to be grown update:

Changed from Bermuda Grass for summer crop to Pearl Millet.

Cereal Rye will remain the winter crop.

Measurement for the 31,500 gallon holding tank located at SDTF 67-10 is as follows:

37' long

12'6" wide

Sincerely,

A handwritten signature in black ink that reads 'Thomas Balaker'.

Thomas Balaker

Toi-Toi of North Carolina

257 Castleberry Industrial Drive • Cumming, GA 30040

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Septage Nutrient Management Plan
2014 update for
Toi Toi of North Carolina, Inc.
SLAS 67-10 Richlands Hwy. site
Onslow County, NC

Contact: Tom Balaker
Jacksonville NC 28540
910-376-0683



Purpose: The purpose of this document is to update the septage nutrient management plan of SLAS #67-10 and to provide updated compliance with state regulations.

Existing Site Conditions: The relevant property lines, approved site limits, natural geographic conditions and known site improvements are incorporated from the prior plan.

A. General Information:

1. Septage will be sampled at least three (3) times per year for waste analysis. These samples will be used to monitor nutrient loadings. The recommended procedure for collecting the samples is as follows:
 - a) Make sure the septage has been stabilized at a pH of 12 with hydrated lime for 30 minutes (domestic septage) or for 2 hours (grease trap septage).
 - b) Set out some pans in the path where the truck will be disposing the septage. Plastic pans are recommended. Do not use zinc plated or galvanized metal pans; the metals content will be distorted.
 - c) Mix contents of 3-4 pans and fill a 16-20 ounce plastic bottle $\frac{3}{4}$ full. Squeeze out some of the excess air and label the bottle with your name and septage sample identification.
 - d) Complete the NCDA&CS Septage Sample Cover Sheet and bring it with the sample to the Cooperative Extension office.

If samples are collected over a couple of days or from different truckloads, it makes for a more representative sample; however, samples should be kept cool. Only one sample is needed, as long as it is mixed from several different sub-samples.

Bring the samples to the Extension Office for forwarding to the NCDA&CS lab.

Please use a check made out to NCDA&CS (\$8.00 per sample). Bottles need to be clearly labeled as a household -lime stabilized- septage sample (waste code MLS). For extra security, place the bottle in a plastic freezer bag. The form and check can be put in an envelope and placed in the bag with the bottle.

2. An annual soil sampling of each numbered field will be conducted and the results maintained on file. Pay particular attention to: soil pH and manganese index.

3. Total available area for septage application on this site is 9.0 acres. This is divided into two smaller fields: (sizes confirmed per Chester Cobb, 06/09/14)
 - a) Field #1 contains approximately 4.7 acres
 - b) Field #2 contains approximately 4.3 acres

The dominant soil series at this site is mainly Baymeade fine sand (BaB) with a small portion of Norfolk loamy fine sand (NoB), and a very small corner of Marvyn loamy fine sand (MaC). These are according to the Onslow Co. Soil Survey (sheets 13 and 18), and the web soil survey. A map is attached.

4. Septage will not be applied when and where 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. It also will not be applied when the field is flooded, frozen, or snow covered.
5. Grease septage is to be diluted at least 1:1 from its original concentration when pumped with domestic septage or water. Grease septage applications shall not exceed 25,000 gallons/acre/yr.
6. Septage storage shall be provided to account for the average volume of septage pumped per week, or an alternative plan, such as disposal at a waste treatment plant, should be in place. Storage tanks are currently located at the site.
7. If the forage is to be grazed, the nitrogen recommendations are to be reduced by 25% for each applicable field.

B. Crops to be grown and approximate planting and harvest times:

1. The operator desires to change the summer crop to pearl millet in both Field #1 & #2, and grow cereal rye during the winter. Prior to planting the pearl millet, kill any residual rye, Bermuda grass, and weeds with glyphosate. Pearl millet establishes best at a pH of 6.0 to 6.5 (may start yellowing at pH above 6.2). Use the soil test report to determine if lime, phosphorus and potassium additions are needed. Manganese sulfate may also be needed.

The November 2013 soil samples for the site indicate a pH of 7.3-7.4, and the \$ and &pH are indicated under manganese. From the NCDA notes ([http://www.ncagr.gov/agronomi/pdf/files/st\\$note.pdf](http://www.ncagr.gov/agronomi/pdf/files/st$note.pdf)), lowering the soil pH through sulfur application would be beneficial. The use of magnesium sulfate will also help (<http://www.soil.ncsu.edu/publications/Soilfacts/AG-439-18/AG-439-18.pdf>).

The following seeding rates are recommended to meet the realistic yield expectation (RYE) and appropriate stand densities. Under adverse conditions, a much lower percentage of the seeds will establish successfully. For that reason, many seeds are needed to obtain a satisfactory stand. During drought and other adverse conditions, reseedling may be necessary:

Cereal rye: 2.5-3 bu/acre (160 lbs per acre broadcast, 140 lbs per acre drilled). Drilled is preferred. If seed is broadcast, cultipacking is recommended to improve seed/soil contact and increase survival rate, especially during dry weather.

Pearl millet: 20-25 lbs/acre if broadcast, or 15-20 lbs/acre if drilled (preferred method)

In Onslow, the prime planting dates for pearl millet are May 1-15, although it can extend into June (see *Planting Guide for Forage Crops in NC*:

<http://edgecombe.ces.ncsu.edu/files/library/33/A.%20Planting%20Guide%20for%20Forage%20Crops%20in%20NC.pdf>). Thirty pounds of nitrogen per acre can be applied at planting. Make cuttings when the stand reaches 15-inches tall, but do not cut the plants shorter than 6-inches or significant die-off may occur. The first cutting of pearl millet is usually a good yield; however, yield and stand may decline during the summer.

Replanting can be done in mid-summer to improve stand density (maintain the required 80% coverage) and maintain application window. Contact Tim Hall, NCDA&CS Regional Agronomist, for stand health questions (324-9924).

Overseeding with cereal rye will occur near mid-October of each year, at a rate of approximately 2.5 bu/acre to 3 bu/acre. The cereal rye will be harvested as hay, preferably by late April to early-May.

2. Crop rotation table:

<i>Field</i>	Crop	Season
1	Cereal rye	mid-October--April
	Pearl millet	May--September
2	Cereal rye	mid-October--April
	Pearl millet	May--September

3. Weed control

If weeds become a problem, contact your technical specialist for assistance and/or the most recent *North Carolina Agricultural Chemicals Manual* for herbicides to control specific weeds. Weed control for the various crops is very weed specific. Please consult one of your local advisors for proper identification and control recommendations.

C. Nitrogen needs for crops grown:

RYE = Realistic Yield Expectation for soil type (majority of each field is Baymeade)

N App. Rate = Suggested nitrogen application rate

<i>Field</i>	<i>Crop (as hay)</i>	<i>RYE tons/acre</i>	<i>N App. Rate lbs/dry ton</i>	<i>Total lbs N/ac</i>	<i>*Gal/ac/yr</i>	<i>Adjusted Gal/ac/yr</i>	<i>Actual lbs N/ac</i>
1 & 2	Cereal rye	1.0	49	49	18,846	18,000	47
	Pearl millet	4.4	54	237	91,154	32,000	83

* This column represents the number of gallons needed to meet the total nitrogen needs of the crops. The maximum permitted application is 50,000 gal/acre/yr, with a maximum winter monthly application of 5,000 gal/acre.

Crops will be harvested as hay and removed from site for feed, bedding, or other approved uses. The **Adjusted gal/acre/year** column represents what can be applied so as not to exceed the maximum permitted application rate of 50,000 gal/acre/yr.

Because the nitrogen needs will not be met, commercial nitrogen fertilizer can be used IF NEEDED. A Plant Tissue Analysis sample can be collected to determine if the plants are deficient. If fertilizer is used, it is important that the crop N requirements not be exceeded! The pearl millet can have up to 154 lbs of commercial N. All such additions are to be documented.

D. Monthly/yearly application rate estimates in gallons:

<i>Crop</i>	<i>Maximum Uptake Period</i>
Pearl millet (hay)	May-August
Cereal rye (hay)	February-April

As shown in the above table, the cereal rye has its maximum nutrient uptake during February through April. There is some uptake, however, as the crop first grows and becomes established. It is generally recommended that 1/3 of the nutrients be applied during the lower growth months (November-January) and the remaining 2/3 be applied during February-April.

It is understood that homeowner pumping requests are greatest during the winter months. The application recommendations in the table below, therefore, are given as the permissible amount WEATHER, CROP, AND FIELD CONDITIONS PERMITTING. In order to get more customers to request summer pumping, you may want to offer a “price incentive” (i.e., have a summer price that is less than the winter price). This would reduce your risk of either an application or crop cover violation. Again, this is just a recommendation.

<i>Month</i>	<i>Field 1 & 2</i>
	<i>application per acre</i>
	<i>Pearl Millet & Rye</i>
January*	low
February*	low
March*	medium
April	medium
May	medium
June	high
July	high
August**	low/medium
September**	low/medium
October	medium
November*	low
December*	low

Low = up to 5,000 gallons; medium = up to 10,000 gallons; high = up to 15,000 gallons

* These months can have wetter soil conditions than during the other months. It is exceedingly important that the applications be applied to the largest surface area practicable, so as not to have any ponding or runoff, and to minimize untrafficable areas.

** Application volume will depend on health and growth stage of crop.

Note: Application dates are approximate and subject to adjustments due to harvesting (30 day rest periods) and weather. They are given as an application guide.

It is understood that weather conditions can cause the winter crop to mature earlier or later than the specified field harvest date. Regulations mandate that a crop be planted or break dormancy within 30 days of any application of septage. No crop can be harvested until at least 30 days after the last septage application to that crop if it is to be used as forage or bedding. Harvests should, therefore, be staggered at intervals among the fields such that at least one is available for application while the others go through the 30 day rest period.

E. Application method:

The preceding information is based on septage being **evenly applied** over the entire permitted site. For this facility, septage will be applied using a pumper truck with a splash plate, when the crops are of suitable height and the field is trafficable. If the entire field is not covered each time, markers or some form of consistent rotation are needed to ensure that one portion of the field is not more heavily loaded than other portions of the field. This can be done by dividing each field into sub-fields (ex.: 1a, 1b, 1c, etc.).

An application record for each sub-field is highly recommended. Waste record forms SLUR-1 and SLUR-2 can be used for record keeping. These and additional forms are available from the local Cooperative Extension office or from the DENR Wilmington Regional Office.

F. Additional fertility requirements:

Optimum nitrogen uptake will not occur if the concentrations of other nutrients limit the crop growth. Septage does not provide adequate supplies of all necessary nutrients over a prolonged period of time; so periodic supplements may be required. These maintenance applications should be based on annual soil test analyses. Soil samples should be taken at a consistent time each year, preferably in the Fall. **DO NOT FOLLOW THE NITROGEN RECOMMENDATION FROM THE SOIL TEST REPORT!** You are to use the nitrogen amounts given in this waste application plan.

A separate soil sample should be collected for the buffer areas. Commercial fertilizer applications to the buffers are to be based on the soil sample results. If you have questions, feel free to ask a Certified Waste Management Plan person in the local Cooperative Extension or Soil & Water Conservation offices.

G. Harvest of the crops and their use:

1. The pearl millet will be cut and baled as hay. Allow the millet to grow to roughly 15- inches tall between cuttings. Do not cut shorter than 6-inches tall.
2. The rye will be cut and baled as hay during April to early May. Kill any residual rye and weeds with glyphosate prior to planting the millet.
3. The baled crops will be transported off site and used as livestock feed or other approved uses.
4. A 30-day waiting period must be observed between the last application of septage and harvest if the material is to be used as livestock feed or bedding; therefore, an application

rotation will need to be established among the fields. Record keeping will be an important factor in documenting proper application. This cycle will continue until your next plan update or other instructions from either DENR or a Certified Waste Management Plan person. Any changes are to be put into writing, placed in your plan file, and copies given to the appropriate agencies.

H. Records required to be kept for five years:

1. Soil tests are to be done annually and the reports kept. Although nitrogen and phosphorus are the main nutrients of interest, some micronutrients are also of concern. Check your soil test results and compare them to the follow table:

<i>Pollutant</i>	<i>Maximum Cumulative Loading Rate (kilograms per hectare)</i>	<i>Equivalent Soil Test Report Value (parts per million)</i>
Zinc	2800	1400
Copper	1500	750
Cadmium	39	19.5
Nickel	420	210
Lead	300	150
Selenium	100	50
Arsenic	41	20.5
Mercury	17	8.5

2. Septage pumping log
3. Septage land application log
4. Septage land application log cover sheet with signed certification

The NC Septage Management Rules (15A NCAC 13B .0822(e)) and the Federal Rules (40 CRF 503.17(b)) require that specific information be recorded and maintained for septage land application sites. Incomplete record keeping may result in penalties. If you do not include the required records your site may not be re-permitted. If you have more than one site and each site has a separate permit number, the records for each must be maintained separately.

One **Septage Land Application Log Cover Sheet** is to be attached to each set of log forms submitted to DENR. The **Septage Pumping Log** (modified SLUR-1) is used to record septage pumped by the firm. The **Septage Land Application Log** (modified SLUR-2) is used to record how the septage is treated and land applied. All blocks are to be completed. One Septage Land Application Log is to be kept for each field and crop. Your site would have a minimum of four log forms for each year:

- Field #1 Rye,
- Field #1 Pearl Millet,
- Field #2 Rye,
- Field #2 Pearl Millet.

If the fields are sub-divided for applications, additional forms may be used. Although not

required, crop harvest records are strongly recommended.

Questions regarding the regulations? Contact Chester Cobb (Composting and Land Application Branch) at 919-707-8285.

Soil Erosion and Runoff Control Plan

Natural Resource Conservation Service best management practices (BMPs) are readily available and directly applicable to septage application sites. Some recommended BMPs for this site include:

1. Maintain a vegetative cover. At any time of the year, crops or their residue should be present on the site.
2. Manage soil surface for maximum infiltration. Minimize soil disturbance by drill planting the winter small grain crop. The Onslow Extension Center has a grain drill available for rent. If soil compaction should become evident (ponding of applied septage), use a subsoiler to loosen the soil and improve infiltration. Field traffic should be kept to a minimum.
3. Maintain vegetation on swales, ditch channels, and all other field exits for stormwater runoff. Bermudagrass buffers at least 50 feet wide should be maintained around the site. A 200-ft buffer is to be maintained in areas adjacent to streams. If additional control or screening is needed, contact the Soil & Water Conservation office to see if the site qualifies for Cost Share assistance. They may be able to help you get trees or shrubs.
4. Extra care and control may be needed on those areas with increased slope. If possible, field edges should be shaped to detain runoff.

Nutrient management and erosion control plans are not static instruments; they are blueprints for planning and optimizing the defined crop use goals. As crop use goals or site conditions change, the management plan may need to be amended. Information sources, such as Cooperative Extension or Soil & Water Conservation, should be used on an ongoing basis.

Submitted by: Tom Balaban

Date: Aug 28 2014

Plan prepared by: Diana M.C. Rashash

Date: 6/9/14

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Attachments: This is an update of the 2007 plan. Any aerial photos, maps, booklets, and forms from the prior plan should be kept and attached to this plan. A site map, NCDA&CS septage sample certification form, and a septage land application log cover sheet are included with this plan.

Please sign both copies and send one copy to:

*Chester Cobb, Soil Scientist
Division of Waste Management
217 West Jones St.
1646 Mail Service Center
Raleigh NC 27699-1646*