Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St., Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

OPERATION PERMIT for an ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 9490 B Permit #: 30005578 Tax Parcel #: 139-276-16

Property Owner: True Homes

Job Location Address: 10815 Hadrians Wall Ct.

City: Charlotte State: NC Zip Code: 28227

Operation Permit Issuance Date: 10/3/2014 Contractor Name: Steven's Septic

Permitted Design Flow: 480 GPD

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: NA gallons

Effluent Pump Model: NA

Dellinger JTB-358-1800 8/22/14

Drainfield Installation ☐ N/A

Trench Depth: 12 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 480 feet

# of Lines: 8 @ 60 feet

Depth of Media: 12 inches (Type) III Bio A36

Depth of Cover: 12 inches

Distribution Device: Ltd Cap

Inspection Dates

Tank(s) Inspected: 10/3/2014

Excavation Inspected: 10/3/14

Pump & Controls Inspected: NA

Bed Installation *(For Repair Installations ONLY.)* ☒ N/A

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Depth of Cover: _____ inches

Distribution Device: _____

Water Supply Source

☐ Municipal ☒ Private Well ☐ Community Well

☐ Other _____

System Installation Setbacks

Distance from Building Foundation: 5 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: >50 feet

SKETCH OF SYSTEM INSTALLATION
(As-Built Drawing)

* Installed according to consultant design by Larry Thompson

The undersigned has inspected the Septic Tank System described above, and certifies it has been ☒ installed ☐ altered ☐ repaired ☐ as detailed in the plot above ☐ in accordance with the permit issued and meets the provisions of 15A NCAC 18A. 1900, "Laws and Rules for Sewage Treatment and Disposal Systems" in effect on the date of issuance of the permit. The issuance of this Operation Permit does not in any way guarantee that the system will operate properly or relieve any person now or hereafter owning, controlling, or using such system from any liability resulting from the failure of the system to operate properly. This document is issued subject to those restrictions and conditions shown on the permit(s) and the provisions of 15A NCAC 18A. 1900 in addition to those listed below under "Comments." This document shall be null and void if any information contained in the application is untrue or if any additions are made to the property which would increase the requirements for said system.

Notice: Disturbance of the designated repair area may result in the Suspension or Revocation of this permit.

Comments: System Classification & Type: III/g/na/na Bio A36/g/na/na

DENR Authorized Agent: Shelby Bedford Signature: Shelby Bedford

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NC DENR
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On-Site Wastewater Section

OPERATION PERMIT for an
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 84 MOB Permit #: 30005878 Tax Parcel #: 139-276-16

Property Owner: True Homes

Job Location Address: 10815 Hadrians Walk Ct.

City: Charlotte State: NC Zip Code: 28227

OPERATION PERMIT CONDITIONS:

I. Performance: System shall perform in accordance with 15A NCAC 18A .1961.

II. Monitoring: System shall be monitored as required by 15A NCAC 18A .1961.

III. Maintenance: Ground absorption sewage treatment and disposal systems shall be checked, and the contents of the septic tank removed, periodically from all compartments, to ensure proper operation of the system. The contents shall be pumped whenever the solids level is found to be more than 1/3 of the liquid depth in any compartment.

IV. Operation: System shall be operated in accordance with 15A NCAC 18A .1961.

System Classification: IIIg

*Operation Permits for Type V and VI systems expire five (5) years from the date of issuance (in accordance with Table V(a)). The system owner must contact GWS six (6) months prior to expiration for permit renewal.

Subsurface system operator required: Yes ☐ No ☐

☐ This type of system requires the system owner to maintain a contract with a certified operator to perform system inspection, maintenance, and reporting as required in 15A NCAC 18A .1961. and Table V(a). The system owner is responsible for all fees associated with these services.

☒ System does not require inspection by GWS on a routine frequency.

☐ System requires inspection by GWS once every five (5) years. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every three (3) years. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every twelve (12) months. The system owner is responsible for all fees associated with the inspection.

☐ System requires inspection by GWS once every six (6) months. The system owner is responsible for all fees associated with the inspection.

V. Other:

DENR Authorized Agent: Shelby Ledford Date: 10/5/2014

Signature: Shelby Ledford

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NC DENR
Division of Environmental Health
On-Site Wastewater Section

INSTALLATION APPROVAL for an
ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

File #: 8490B Permit #: 30005578 Tax Parcel #: 139-276-16

Property Owner: True Homes lot 44

Job Location Address: [redacted] 10815 Hadrians walk Ct

City: Charlotte State: NC Zip Code: 28227

Installation Approval Issuance Date: 09/16/14

Permission is hereby given to ☒ install ☐ alter ☐ repair an on-site wastewater treatment & and disposal system, with subsurface soil absorption and effluent discharge, as specified herein at the described location. This approval is granted based upon the application information submitted to our office. All work shall be completed on or before _____, after which date this approval shall be null and void. The system shall meet all of the construction requirements of 15A NCAC 18A. 1900 which are in effect on the date of granting this approval. An **Operation Permit** must be obtained from the Mecklenburg County Health Department before any system can be covered up or placed into service. The issuance of this permit does not in any way guarantee that the system anticipated to be constructed will operate properly, or relieve any person now of hereafter owning, controlling or using such system from any liability resulting from the failure of the system to operate properly.

***NOTICE: This system shall not be installed while soils are in a wet condition.**

Permitted Design Flow: 450 GPD

Site LTAR: 0.25 GPD/ft² (For new installations only.)

Liquid Capacity of Septic Tank: 1500 gallons

Liquid Capacity of Dosing Tank: NA gallons

Drainfield Design ☐ N/A

Trench Depth: 12 inches

Trench Width: 3 feet

Line Spacing: 9 feet (O.C.)

Total line length: 450 feet

# of Lines: 8 @ 60 feet

Depth of Media: 12 inches (Type) III (Chambers)

Distribution Device: Drop Boxes

Bed Design *(For Repair Installations ONLY.)* ☒ N/A

Bed Depth: _____ inches

Bed Width: _____ feet

Total line length: _____ feet

# of Lines: _____ @ _____ feet

Depth of Media: _____ inches (Type) _____

Distribution Device: _____

Water Supply Source

☐ Municipal ☒ Private Well ☐ Community Well

☐ Other _____

Minimum System Setbacks

Distance from Building Foundation: >10 feet

Distance from Property Line: 10 feet

Distance from Water Supply Source: 50 feet

SKETCH OF SYSTEM LAYOUT
(Proposed Layout)

Install according to and
*See Consultant Design

Comments: System Classification & Type: III/g/na/na

DENR Authorized Agent: Shelby Redford Signature: Shelby Redford

THOMPSON ENVIRONMENTAL CONSULTING, INC.
WATER ♦ WASTEWATER ♦ WETLANDS

September 29, 2014

Shelby Ledford
Mecklenburg County Groundwater and Wastewater Services
700 N. Tryon Street, Suite 211
Charlotte, NC 28202

Dear Ms. Ledford,

The purpose of this letter is to inform you that I have performed an inspection of the wastewater treatment and disposal system installed for Lot 44 in the Sherwood Forest subdivision. I am satisfied that the installation meets the intent of the original proposal submitted to your office.

Please feel free to call on me if you have any further questions or concerns regarding this project.

Sincerely,

Larry B. Thompson, Jr.

PO BOX 541 • MIDLAND, NC • 28107-0541
PHONE: 704-301-4881 • FAX: 206-350-8895
E-MAIL: LARRY@THOMPSONENV.COM
WEB: WWW.THOMPSONENV.COM

FEE: 200.00
DATE:7/15/2014

MECKLENBURG COUNTY
GROUNDWATER & WASTEWATER SERVICES

FILE NUMBER: 8490B

PERMIT NUMBER: 30005578

PARCEL NUMBER: 13927616

JOB LOCATION INFORMATION

ADDRESS: 10815 HADRIANS WALK CT

CITY: CHARLOTTE **STATE: NC** **ZIP:** 28227

ISSUED TO: B & C Land Holdings LLC

CONSTRUCTION AUTHORIZATION ISSUANCE DATE: 7/5/2012

CONSTRUCTION AUTHORIZATION CONDITIONS

1. WASTEWATER SYSTEM CONSTRUCTION AND INSTALLATION MUST MEET ALL CONDITIONS AND SPECIFICATIONS AS SET FORTH IN IMPROVEMENT PERMIT NUMBER 30005578, AND THE ATTACHED SITE PLAN WITH SYSTEM DETAILS. CONSTRUCTION AND INSTALLATION MUST ALSO MEET ALL REQUIREMENTS SET FORTH IN THE RULES GOVERNING SANITARY SEWAGE COLLECTION, TREATMENT, AND DISPOSAL AND ANY OTHER APPLICABLE RULES AND LAWS.

2. AN INSTALLATION APPROVAL MUST BE SECURED PRIOR TO INSTALLATION OF THE SEPTIC TANK SYSTEM. THE INSTALLER OF THE SYSTEM SHALL BE A REGISTERED SEPTIC TANK CONTRACTOR WITH THE MECKLENBURG COUNTY HEALTH DEPARTMENT.

3. ANY ALTERATION IN SITE OR SOIL CONDITIONS (INCLUDING LOCATION OF STRUCTURES AND APPURTENANCES) OR MODIFICATION IN USE, DESIGN WASTEWATER FLOW, OR WASTEWATER CHARACTERISTICS AS SPECIFIED IN THE ASSOCIATED IMPROVEMENT PERMIT AND APPLICATION, MAY SUBJECT THIS CONSTRUCTION AUTHORIZATION AND ASSOCIATED PERMIT(S) TO REVOCATION.

4. THIS CONSTRUCTION AUTHORIZATION AS PROVIDED IN G.S. 130A-335(f) AND G.S. 130A-336(b) SHALL BE VALID FOR A PERIOD EQUAL TO THE VALIDITY OF THE IMPROVEMENT PERMIT, NOT TO EXCEED 60 MONTHS.
   *CONSTRUCTION AUTHORIZATION EXPIRATION DATE: 7/25/2017

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: 30005578 GWS File #: 8490B Tax Parcel #: 139-276-16

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is NOT transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire in Five (5) Years **Expiration Date (If Applicable):** 7/25/2017

Type of Installation: Residential - New System Lot Number: 44

Structure Type: HOUSE Size (ft^2): 3200 # Bedrooms: 4 # Occupants: 3

Building Foundation: Concrete Slab Water Supply: Private Well

II. Initial System Type: Approved **System Classification:** IIIg

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	N/A
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1440	Total Trench Length (ft):	480
Maximum Trench Depth (in):	12	Depth of Media (in):	12	Distribution Device:	Drop Boxes		

III. Repair System Type: Approved **System Classification:** IIIg

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.25	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	N/A
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1440	Total Trench Length (ft):	480
Maximum Trench Depth (in):	12	Depth of Media (in):	12	Distribution Device:	Drop Boxes		

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Jeremy Michael Owner/Legal Agent: _____
Print Name

Signature: Jeremy Michael REHS Signature: _____

Date Issued: 7/25/2012

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: **30005578** GWS File #: **8490B**

IV. Permit Conditions/Comments:

- All drainage improvements (swales, interceptor drains, etc.) noted on the plot plan must be inspected and approved prior to issuance of an Operation Permit.
- Additional soil cover, as specified on the plot plan, required over the drain field must be inspected and approved prior to issuance of an Operation Permit.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All components of the septic system must be installed in accordance with the required setbacks listed on the corresponding plot plan.
- All components of the septic system must be located at least 100 ft. (50 ft. minimum) from all private wells.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- Foundation drains shall be constructed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 10 feet from any foundation drain.

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment and Disposal Systems* and is subject to the following provisions:

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- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

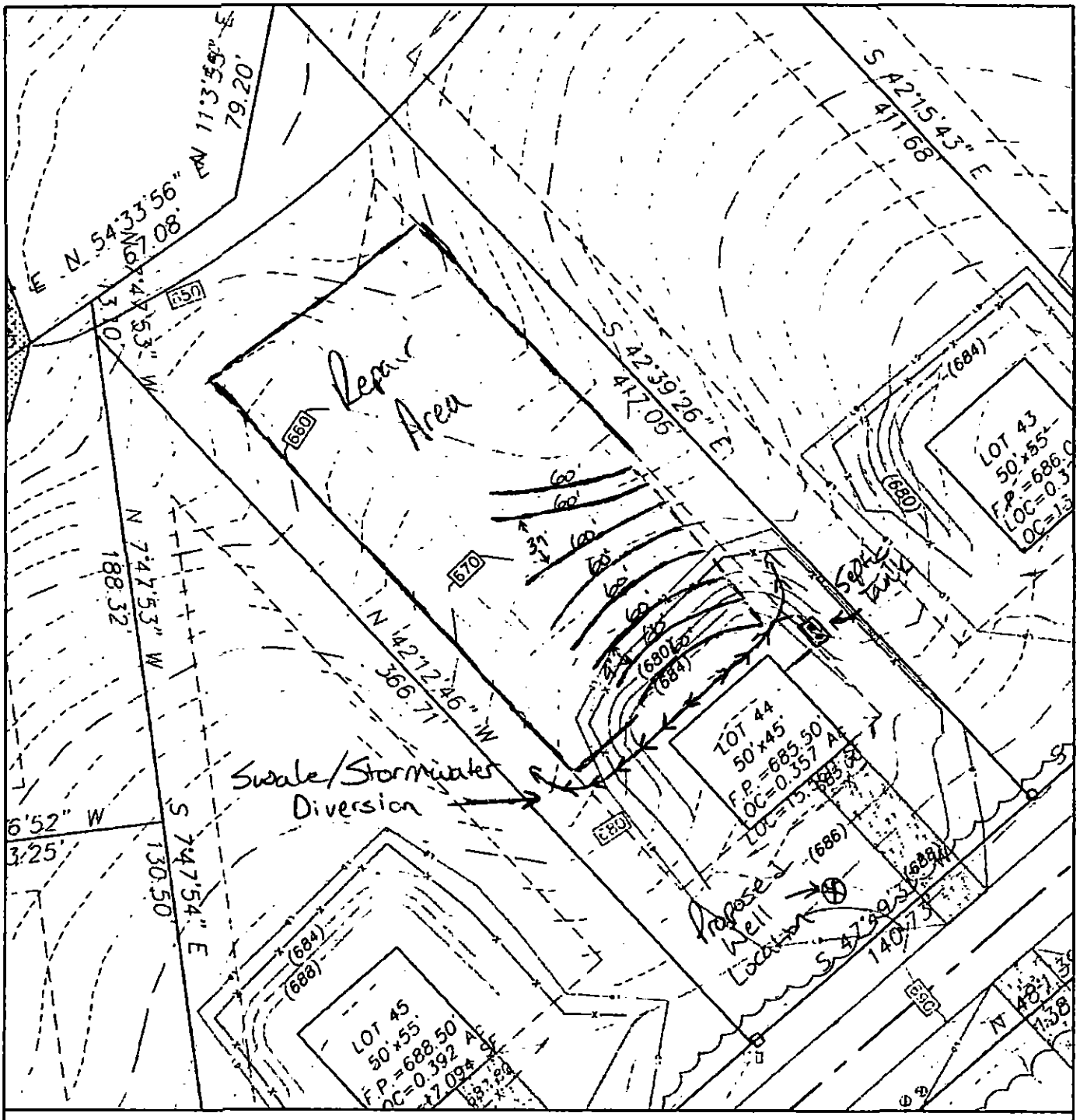
DENR Authorized Agent: Jeremy Michael

Signature: Jeremy Michael REHS.

Date Issued: 7/25/2012

Owner/Legal Agent: _____
Print Name

Signature: _____



LOT GRADING PLAN
LOT 44
SHERWOOD FOREST SUBDIVISION
MINT HILL, NORTH CAROLINA
CAROLINA DEVELOPMENT SOLUTIONS, LLC
1932 CLARK ELLIOT STREET
FORT MILL, SOUTH CAROLINA 29708
SCALE 1"=50'

GRAPHIC SCALE
50 25 0 50

summit
landservices
P.O. BOX 3447
CHARLOTTE, NC 28241
OFFICE: 704.509.0534
FAX: 704.504.1175
WWW.SUMMIT-COMPANIES.COM

Residential Subsurface Wastewater Treatment and Disposal System Proposal

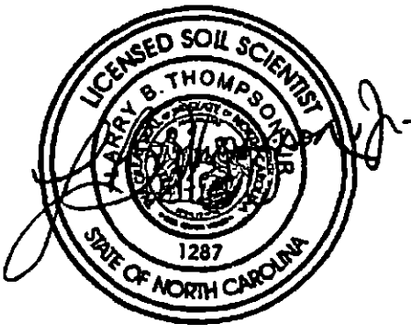
for

Sherwood Forest – Lot 44
10815 Hadriana Walk Court
Mint Hill, North Carolina

Tax Parcel # 139-276-16
MCGWS File # 8490B
July 19, 2012

Prepared for:

True Homes
2649 Brekonridge Center Drive
Monroe, NC 28110
704-238-1229



Prepared by:

Larry Thompson, REHS, PWS, LSS
Thompson Environmental Consulting, Inc.
PO Box 541
Midland, NC 28107-0541
Phone: 704-301-4881
Fax: 704-888-6066
larry@thompsonenv.com



cc: Mr. Philo Walker, RS
Mecklenburg County Groundwater and Wastewater Services

Plans and Specifications

A. Septic Tank

1. The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1500 gallons in capacity.
2. The septic tank will be fitted with an approved effluent filter.
3. It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tank has had time to properly cure and is free of cracks or other structural deficiencies.

B. Pipe, Fittings and Supply Line

1. All discharge piping, connectors and supply lines should be made of SCH 40 PVC.
2. All joints must be properly "welded" utilizing the appropriate PVC cement for each application.

C. Distribution Method

E. Drainage Improvements

1. A swale/stormwater diversion ditch is required as part of the system installation.
2. The swale/diversion shall be constructed at least 10 feet off of the uppermost drainline immediately behind the residence and sloped to drain around the length of the drainfield.

E. Final Landscaping

3. Final cover over the drainfield shall be at least 6 inches deep.
4. The drainfield shall be shaped to shed rainwater and be free from low spots.
5. The drainfield area should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

F. Utility Conflicts

1. The builder and property owner must take special care in planning for water, power, gas, telephone and cable lines. These utilities shall be kept clear of all parts of the septic system and its proposed repair area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation. If there are any questions regarding preferred routes, contact the MCGWS as soon as possible.
2. Lawn irrigation should not be placed over the drain field area.

Maintenance

G. In General

1. The homeowner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
2. The septic tank should be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner has the septic and pump tanks cleaned out annually.
3. When it becomes necessary to clean the effluent filter, the filter should be removed and the accumulated debris washed back into the septic tank – not onto the lawn.
4. Any damp areas, leakages or malfunctions in the drainfield area should be addressed immediately.
5. Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

H. Suggestions to the Homeowner

1. As previously mentioned, if you plan to use a garbage disposal in your home you should plan to have your septic and pump tanks cleaned out annually. The ground up garbage adds large amounts of solids into a septic tank that tend to degrade at a very slow rate.
2. Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
3. Used motor oil or any oily liquids should not be disposed of in a septic tank.
4. Be aware of the amount of water that you are using in your home. Water saving fixtures and devices can be installed on sinks, toilets and showers to reduce the volume of wastewater that you are sending to your drain field.
5. Run dishwashers and washing machines only when you have a full load.
6. Use liquid detergents. Powdered detergents have binding agents in them that tend to solidify in the wastewater disposal system.
7. Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drain field.
8. Do not use chemical additives in your system. Studies have indicated that they do not increase the biological activity that naturally occurs in the septic system and in some cases certain additives have been found to be detrimental to the life of a system.

Design Specifics

Daily Design Flow:	480 GPD – 4 bedroom house
Septic Tank Size:	1500 gallons (minimum)
Effluent Loading Rate:	Design = 0.25 GPD per sq. ft.
Drain Field Type:	Accepted 25% Reduction
Distribution Method:	Serial Distribution
Number of Drainlines:	8
Drain Lines:	(8) 3' Wide x 60' long
Total Trench Length:	480 Linear Feet
Maximum Trench Depth:	12 inches
Final Cover Requirement:	6 inches (minimum)
Drainage Improvements:	Swale/Stormwater Diversion Channel

Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 1 of 3
Property ID: 13927616
Lot #: 44
File #: 84908
AppID: 5578

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

Owner: B and C Land Holdings LLC
Applicant: Scott Twiddy
Address: 2649 Brekonridge Centre Dr Monroe, NC 28110
Date Evaluated: 5/21/2012
Proposed Facility: 4 bedroom House Design Flow (.1949) 480 gpd
Property Size: 1.233 Ac
Location of Site: 10815 Hadrians walk ct (sherwood Forest lot 44)
Property Recorded:
Water Supply: [ ] Public [ ] Individual [X] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	SOIL MORPHOLOGY 1941				PROFILE FACTORS b				
	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	1941 Structure/ Texture	1941 Consistence Mineralogy	1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1956 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
Pit 1	LS	0-10	w f gr SL	ns np fr nexp	>51	51	NA	PS	PS IV
	10%	10-31	m m sbk/abk C	ss sp fi sexp					0.275
		31-51	w f sbk CL	ss sp fr sexp					
Pit 2	LS	0-5	w f gr SL	ns sp fr nexp	>50	50	NA	PS	PS IV
	10%	5-32	m m sbk/abk C	ss sp fi sexp					0.3
		32-50	w f sbk CL	ss sp fr sexp					
Pit 3	LS	0-20	m m abk/sbk C	s p fi sexp	43	28	US	PS	PS IV
	10%	20-28	w f sbk CL	ss sp fi sexp			Cr		0.25
		28-55	sls m L	ns np fr nexp			mixed in		
							with		
							Saprolite		
Pit 4	LS	0-3	w f gr SL	ns np fr nexp	>51	41	NA	PS	PS IV
	15%	3-29	m m sbk/abk C	ss sp fi sexp					0.275
		29-38	w f sbk CL	ss sp fr sexp					
		38-51	w f sbk CL	ss sp fr sexp	relic yellow/whites				
					@29+13851				

Description	Initial System	Repair System
Available Space (.1945)		
System Type(s)		
Site LTAR		

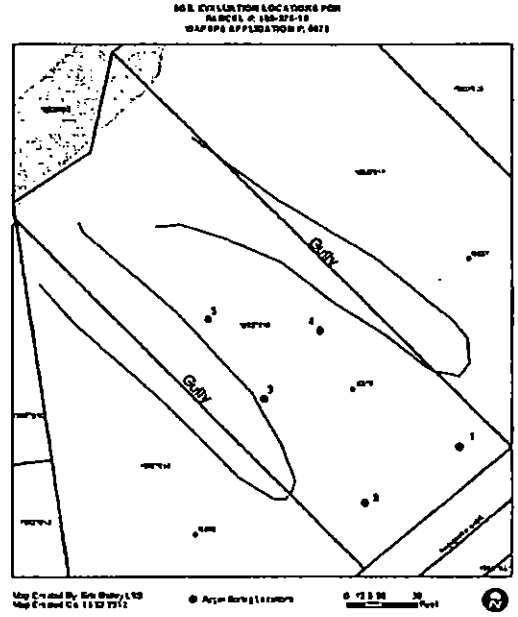
Other Factors (.1946):
Soil Evaluation By: Eric Bailey LSS
Others Present:
Site Classification (.1948):
Site Evaluation By:
Others Present:

COMMENTS:

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Foot Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	SI-Sill	0.6 - 0.3	PL-Platy
CV-Convex Slope		SICL-Silty Clay Loam		PR-Prismatic
T-Terrace		CL-Clay Loam		
FP-Flood Plain		SCL-Sandy Clay Loam		
D-Drainage Way		SiL- (Silt Loam)		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SiC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	NEXP-(Non-expansive)
FR-Friable	SS-Slightly Sticky	SEXP-Slightly Expansive
FI-Firm	S-Sticky	EXP-Expansive
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



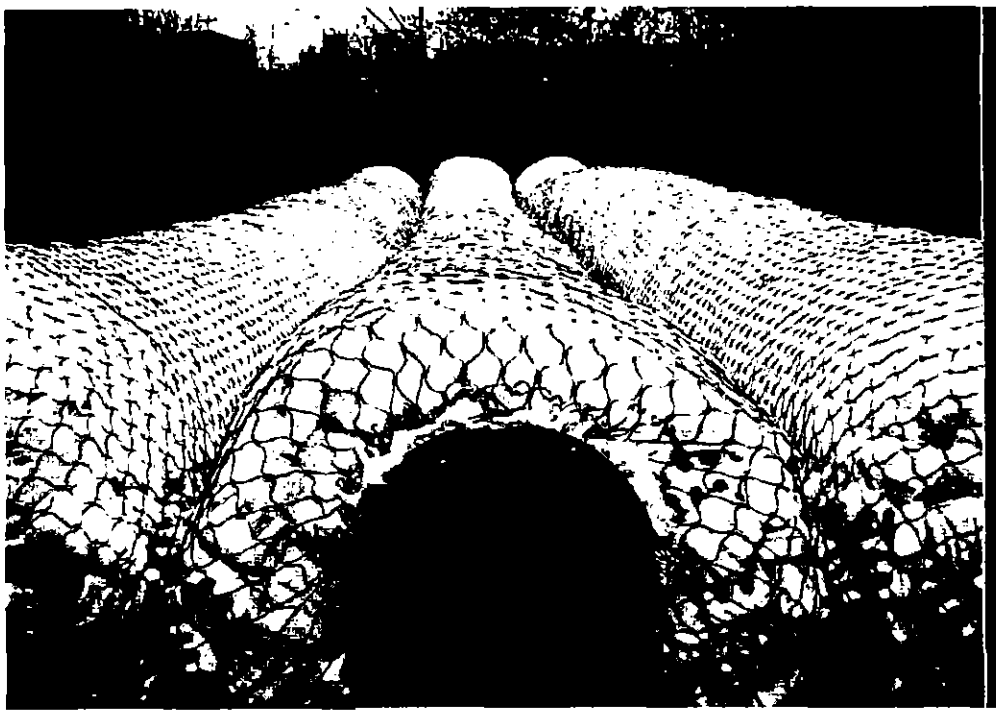
Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 3 of 3
File #: 8490B

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
CONTINUED

PROFILE #	1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY 1941 Structure/ Texture	SOIL MORPHOLOGY 1941 Consistance Mineralogy	OTHER PROFILE FACTORS 1942 Soil Wetness/ Color	1943 Soil Depth (IN.)	1950 Sapro Class	1944 Restr Horiz	Profile Class & LTAR
Pit	R	0-7	w f gr SL	ns np fr nexp	>52	52	NA	PS	PS IV
5	25%	7-23	m m sbk/abk C	ss sp fl sexp					0.25
		23-52	w f sbk CL	ss sp fr sexp					

EZ*flow* by INFILTRATOR



EZ*flow* by Infiltrator is an environmentally friendly replacement to traditional stone and pipe drainfields using an engineered geosynthetic aggregate modular design. The **EZ*flow*** system is designed to improve infiltration performance by eliminating the fines associated with crushed stone, and reducing compaction and embedment associated with stone. Preassembled units include a 3" or 4" perforated pipe surrounded by aggregate and held in place with a durable high-strength netting. This product comes in easy-to-contour 5' and 10' lengths and in diameters of 7, 8, 9, 10, 12, 13, or 14 inches.

Compared with stone and pipe, benefits include:

- Always clean and free of fines
- Bundles are quick to install, saving costs on heavy machinery and labor
- Modular construction allows configurations to match trench dimensions for most system shapes and sizes
- Engineered for optimal storage and absorption efficiencies
- Ability to contour along sloped sites and around trees or landscaping
- Lightweight system is perfect for repairs and tight job sites
- Easily hand-carried into position reducing time and labor
- 5' or 10' lengths with simple snap, internal couplers
- Easier cleanup at the job site with the elimination of stone
- Manufactured from recycled materials rather than a mined natural resource
- A wide variety of diameters and configurations to meet any installation professional's needs
- Approved in many jurisdictions with an increased efficiency rating, reducing drain field size
- Also useful for foundation and other drainage applications
- Backed by the leader in the onsite wastewater industry

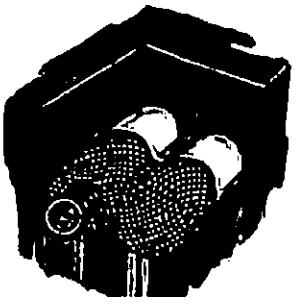
EZ*flow*™ by INFILTRATOR

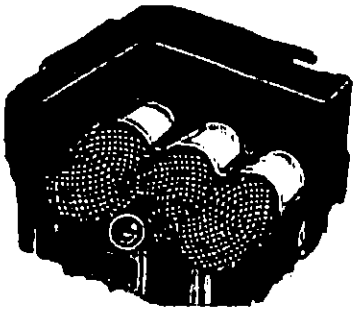
For technical assistance, installation instructions or customer service, call Infiltrator Systems at 800.689.7759.

EZ*flow* by INFILTRATOR

Configurations: Available in 7", 8", 9", 10", 12", 13" and 14" diameter bundles.





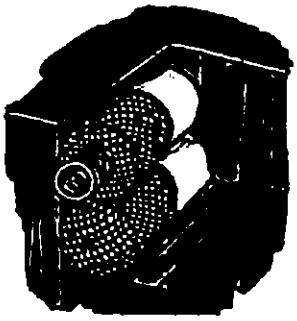


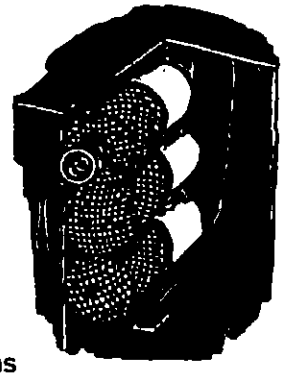
Single Pipe Systems

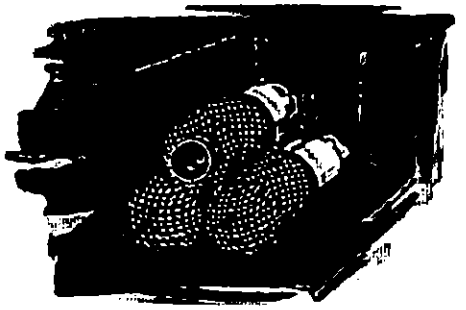
0701P-GEO
0801P-GEO
1001P-GEO
1001LPP-GEO
1201P-GEO
1201LPP-GEO
1401P-GEO

Horizontal Systems

0705H-GEO
0904H-GEO
1002H-GEO
1003H-GEO
1006H-GEO
1202H-GEO
1203H-GEO
1203HP-GEO
1206H-GEO
1209H-GEO
1303H-GEO
1402H-GEO







Vertical Systems

1002V-GEO
1003V-GEO
1004V-GEO
1006V-GEO
1202V-GEO
1203V-GEO
1204V-GEO
1206V-GEO
1402V-GEO

Triangular Systems

1003T-GEO
1203T-GEO
1303T-GEO
1403T-GEO

Notes:

1. *Other systems include 12" square and 10" and 12" bed systems. Bed systems will dictate the number of bundles.*
2. *System dimensions are dependent upon bundle diameter and configuration.*
3. *LLP is for "Low Pressure Pipe" in which a pressurized distribution pipe is field installed within the corrugated pipe.*
4. *Internal pipe and couplings meet the requirements of ASTM F405.*
5. *Bundles are also available without geotextile between the netting and synthetic aggregrate.*

INFILTRATOR SYSTEMS INC. STANDARD LIMITED WARRANTY

(a) The structural integrity of each EZflow by Infiltrator expanded polystyrene drainfield system and other accessories manufactured by EZflow by Infiltrator ("Units"), when installed and operated in a leachfield or an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units, provided, however that if a septic permit is not required by local code law, the warranty period will begin upon the date that installation of the septic system commences. To exercise its warranty rights, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for Units determined by EZflow by Infiltrator to be covered by this Limited Warranty. EZflow by Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b)THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

(c) This Limited Warranty shall be void if any part of the EZflow system is manufactured by anyone other than EZflow by Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units, the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions, failure to maintain the minimum ground covers set forth in the installation instructions, the placement of improper materials into the system containing the Units, failure of the Units or the septic system due to improper sizing or improper sizing, excessive water usage, improper grease disposal, or improper operation, or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes, all other applicable laws and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change or extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's Corporate Headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

INFILTRATOR®
systems Inc.
6 Business Park Road • P.O. Box 768
Old Saybrook, CT 06475
860.577.7000 • FAX 860.577.7001

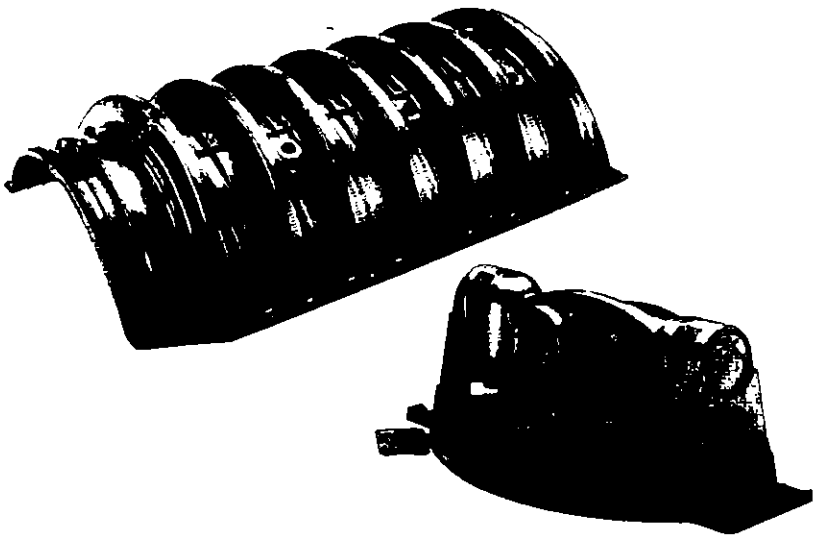
800.689.7759
www.ezflowlp.com
www.infiltratorsystems.com

For technical assistance, installation instructions or customer service, call Infiltrator Systems at 800.689.7759.

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The **Quick4® Standard** Chamber

INFILTRATOR®
systems inc.





The evolutionary patent-pending Quick4® Standard Chamber fits in a 36" wide trench and is ideal for curved or straight systems. It features the patent-pending Contour Swivel Connection™ which permits 10-degree turns, right or left. The MultiPort™ end cap allows multiple piping options and eliminates pipe fittings. The chamber's four-foot length provides optimal installation flexibility.

The Quick4 Standard Chamber Offers You These Unique Benefits:

- Advanced contouring connections swivel 10-degrees, right or left
- Latching mechanism allows for quick installation
- Compact nesting provides more trench length in an equivalent stack height
- Four-foot chambers are easy to handle and install
- The Quick4 Standard Chamber supports wheel loads of 16,000 lbs/axle with only 12" of cover
- Certified by the International Association of Plumbing and Mechanical Officials (IAPMO)

The MultiPort End Cap Offers These Unique Benefits:

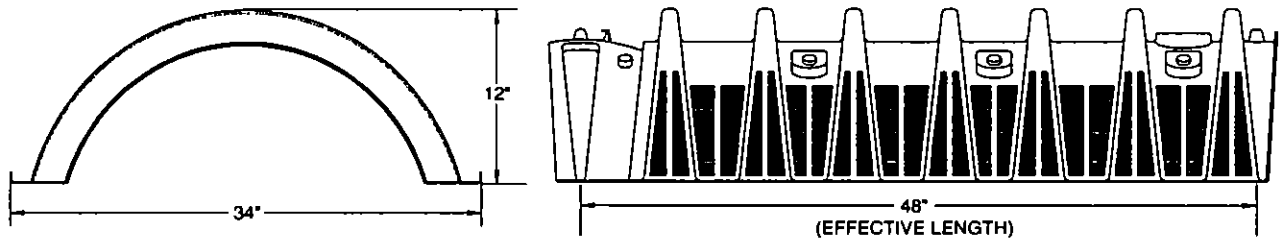
- Patent-pending tear-out seals on inlet ports provide a tight fit to the pipe
- Eight molded-in inlets/outlets allow for maximum piping flexibility
- Multiple ports eliminate pipe fittings and make looping ends easy
- Patent-pending MultiPort end cap fits on either end of the Quick4 Standard Chamber

Infiltrator is the number-one septic leachfield chamber system in the onsite industry, with over 42 million units in-ground in all 50 states and 24 countries.

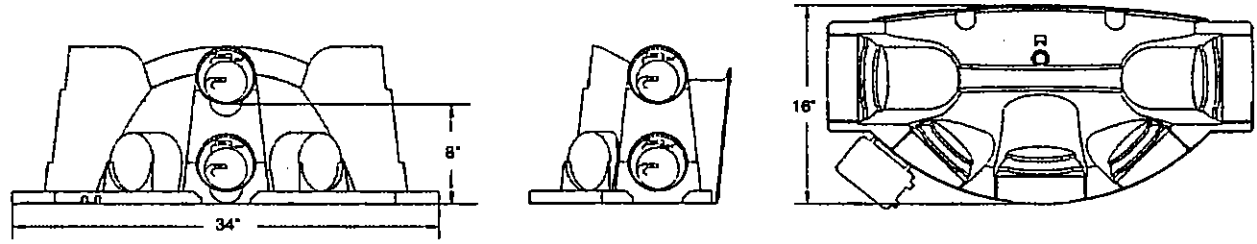
Approved in _____

The **Quick4® Standard** Chamber

The Quick4 Standard Chamber



MultiPort End Cap



FRONT VIEW | SIDE VIEW | TOP VIEW

Quick4 Standard Chamber Specifications

Size (W x L x H) .....34" x 53" x 12" (86 cm x 135 cm x 31 cm)	Louver Height.....8" (20 cm)
Effective Length .....48" (122 cm)	Invert Height.....8" (20 cm)

INFILTRATOR SYSTEMS, INC. STANDARD LIMITED WARRANTY

(a) The structural integrity of each chamber, end cap and other accessory manufactured by Infiltrator ("Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date that the septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required by applicable law, the warranty period will begin upon the date that installation of the septic system commences. To exercise its warranty rights, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for Units determined by Infiltrator to be covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b)THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE

(c) This Limited Warranty shall be void if any part of the chamber system is manufactured by anyone other than Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper sizing or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty. Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change or extend this Limited Warranty. No warranty applies to any party other than the original Holder.

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The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's Corporate Headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

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6 Business Park Road • P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • FAX 860-577-7001

1-800-221-4436
www.infiltratorsystems.com

For technical assistance, installation instructions or customer service, call Infiltrator Systems at 1-800-221-4436.

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844
Canadian Patents: 1,329,959; 2,004,564 Other patents pending.

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Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 1 of 3
Property ID: 13927616
Lot #: 44
File #: 8490B
AppID: 5578

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: B and C Land Holdings LLC
Applicant: Scott Twiddy
Address: 2649 Brekonridge Centre Dr Monroe, NC 28110
Date Evaluated: 5/21/2012
Proposed Facility: 4 bedroom House Design Flow (.1949) 480 gpd
Property Size: 1.233 Ac
Location of Site: 10815 Hadrians walk ct (sherwood Forest lot 44)
Property Recorded:
Water Supply: [ ] Public [ ] Individual [X] Well [ ] Spring [ ] Other
Evaluation Method: [ ] Auger Boring [X] Pit [ ] Cut
Type of Wastewater: [X] Sewage [ ] Industrial Process [ ] Mixed

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	b PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
Pit 1	LS	0-10	w f gr SL	ns np fr nexp	>51	51	NA	PS	PS IV
	10%	10-31	m m sbk/abk C	ss sp fi sexp					0.275
		31-51	w f sbk CL	ss sp fr sexp					
Pit 2	LS	0-5	w f gr SL	ns sp fr nexp	>50	50	NA	PS	PS IV
	10%	5-32	m m sbk/abk C	ss sp fi sexp					0.3
		32-50	w f sbk CL	ss sp fr sexp					
Pit 3	LS	0-20	m m abk/sbk C	s p fi sexp	43	28	US	PS	PS IV
	10%	20-28	w f sbk CL	ss sp fi sexp			Cr		0.25
		28-55	sls m L	ns np fr nexp			mixed in		
							with		
							Saprolite		
Pit 4	LS	0-3	w f gr SL	ns np fr nexp	>51	41	NA	PS	PS IV
	15%	3-29	m m sbk/abk C	ss sp fi sexp					0.275
		29-38	w f sbk CL	ss sp fr sexp					
		38-51	w f sbk CL	ss sp fr sexp	relic yellow/whites				
					@29+I3851				

Description	Initial System	Repair System
Available Space (.1945)		
System Type(s)		
Site LTAR		

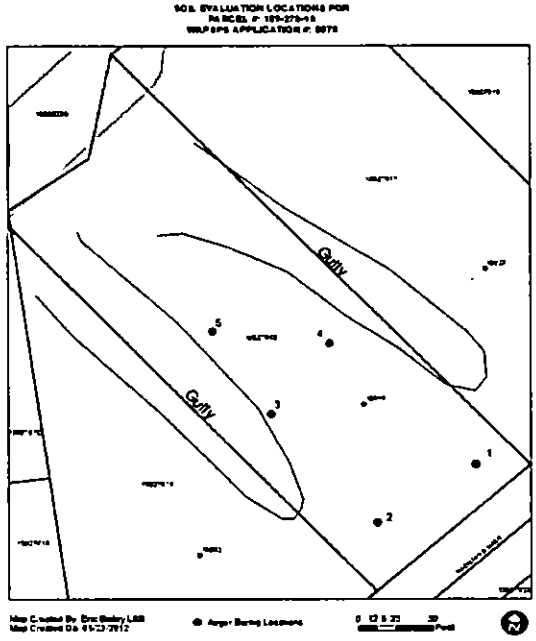
Other Factors (.1946):
Soil Evaluation By: Eric Bailey LSS Eric Bailey
Others Present:
Site Classification (.1948):
Site Evaluation By:
Others Present:

COMMENTS:

Landscape Position	Group	Texture	.1955 LTAR	Structure
R-Ridge	I	S-Sand	1.2 - 0.8	SG-Single Grain
SS-Shoulder Slope		LS-Loamy Sand		M-Massive
LS-Linear Slope				CR-Crumb
FS-Foot Slope	II	SL-Sandy Loam	0.8 - 0.6	GR-Granular
NS-Nose Slope		L-Loam		SBK-Subangular Blocky
HS-Head Slope				ABK-Angular Blocky
CC-Concave Slope	III	Si-Silt	0.6 - 0.3	PL-Platy
CV-Convex Slope		SiCL-Silty Clay Loam		PR-Prismatic
T-Terrace				
FP-Flood Plain		CL-Clay Loam		
D-Drainage Way		SCL-Sandy Clay Loam		
		SiL- (Silt Loam)		
	IV	SC-Sandy Clay	0.4 - 0.1	
		SiC-Silty Clay		
		C-Clay		

Consistence Moist	Consistence Wet	Mineralogy
VFR-Very Friable	NS-Non-Sticky	NEXP-(Non-expansive)
FR-Friable	SS-Slightly Sticky	SEXP-Slightly Expansive
FI-Firm	S-Sticky	EXP-Expansive
VFI-Very Firm	VS-Very Sticky	
EFI-Extremely Firm	NP-Non-Plastic	
	SP-Slightly Plastic	
	P-Plastic	
	VP-Very Plastic	

Sketch of Soil Evaluation Locations



Department of Environment, Health, and Natural Resources
Division of Environmental Health
On-site Wastewater Section

Sheet: 3 of 3
File #: 8490B

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM
CONTINUED

PROFILE #	.1940 Landscape Position/ Slope%	Horizon Depth (IN.)	SOIL MORPHOLOGY .1941 .1941 Structure/ Texture	.1941 Consistence Mineralogy	OTHER PROFILE FACTORS .1942 Soil Wetness/ Color	.1943 Soil Depth (IN.)	.1956 Sapro Class	.1944 Restr Horiz	Profile Class & LTAR
Pit	R	0-7	w f gr SL	ns np fr nexp	>52	52	NA	PS	PS IV
5	25%	7-23	m m sbk/abk C	ss sp fi sexp					0.25
		23-52	w f sbk CL	ss sp fr sexp					

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: 30005678 GWS File #: 8490B Tax Parcel #: 139-276-16

- This IMPROVEMENT PERMIT is subject to revocation if site plans or the intended use change. There is to be NO grading, filling, or disturbance of the soil in the area of the septic tank system or repair area.
- CONSTRUCTION AUTHORIZATION must be obtained prior to receiving a Building Permit. The Construction Authorization is NOT transferable. Do not clear, grade, fill or disturb soil prior to obtaining a Construction Authorization.
- Domestic-type wastewater only. No industrial process wastewater may be discharged into the system.

I. This Improvement Permit Shall: Expire In Five (5) Years **Expiration Date (If Applicable):** 7/25/2017

Type of Installation: Residential - New System Lot Number: 44

Structure Type: HOUSE Size (ft^2): 3200 # Bedrooms: 4 # Occupants: 3

Building Foundation: Concrete Slab Water Supply: Private Well

II. Initial System Type: Approved **System Classification:** IIIg

Initial System Specifications:

Design Flow (gpd): 480 LTAR (gpd/ft^2): 0.25 Septic Tank Size (gal): 1500 Pump Tank Size (gal): N/A

Trench Width (ft): 3 Trench Spacing (ft): 9 Absorption Area (ft^2): 1440 Total Trench Length (ft): 480

Maximum Trench Depth (in): 12 Depth of Media (in): 12 Distribution Device: Drop Boxes

III. Repair System Type: Approved **System Classification:** IIIg

Repair System Specifications:

Design Flow (gpd): 480 LTAR (gpd/ft^2): 0.25 Septic Tank Size (gal): 1500 Pump Tank Size (gal): N/A

Trench Width (ft): 3 Trench Spacing (ft): 9 Absorption Area (ft^2): 1440 Total Trench Length (ft): 480

Maximum Trench Depth (in): 12 Depth of Media (in): 12 Distribution Device: Drop Boxes

IV. Permit Conditions/Comments:

(Please See the Following Page for Permit Conditions.)

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment, and Disposal Systems* and is subject to the following provisions:

- No work shall be conducted on the septic system until an INSTALLATION APPROVAL is granted by the Department.
- The septic system installer shall be a registered septic contractor with Mecklenburg County Health Department.
- The permitted system shall be installed in accordance with the included PLOT PLAN.
- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Jeremy Michael Owner/Legal Agent: Jackie Dracup
Print Name

Signature: Jeremy Michael REHS Signature:

Date Issued: 7/25/2012

Mecklenburg County Groundwater & Wastewater Services
700 N. Tryon St, Suite 211 Charlotte, NC 28202
Phone: (704) 336-5103 Fax: (704) 336-6894

NC DENR
Division of Environmental Health
On-Site Wastewater Section

IMPROVEMENT PERMIT for a RESIDENTIAL ON-SITE WASTEWATER TREATMENT & DISPOSAL SYSTEM

Permit #: 30005578 GWS File #: 8490B

IV. Permit Conditions/Comments:

- All drainage improvements (swales, interceptor drains, etc.) noted on the plot plan *must be inspected* and approved prior to issuance of an Operation Permit.
- Additional soil cover, as specified on the plot plan, required over the drain field must be inspected and approved prior to issuance of an Operation Permit.
- The septic system shall be installed in accordance with the plans submitted by the wastewater system design consultant.
- All components of the septic system must be installed in accordance with the required setbacks listed on the corresponding plot plan.
- All components of the septic system must be located at least 100 ft. (50 ft. minimum) from all private wells.
- Flow from all gutters and downspouts shall be directed not to discharge water onto or across any part of the septic system.
- Foundation drains shall be constructed not to discharge water onto or across any part of the septic system.
- The septic system shall be located at least 10 feet from any foundation drain.

The undersigned, an authorized agent of the MECKLENBURG COUNTY HEALTH DEPARTMENT, certifies that the Department is issuing an IMPROVEMENT PERMIT for the above referenced property. This permit is being issued in accordance with the *Laws and Rules For Sewage Treatment and Disposal Systems* and is subject to the following provisions:

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DENR Authorized Agent: Jeremy Michael

Signature: Jeremy Michael REHS

Date Issued: 7/25/2012

Owner/Legal Agent: Jackie Dracup
Print Name

Signature: Jackie Dracup