14004 BW

MECKLENBURG COUNTY
GROUNDWATER & WASTEWATER SERVICES 4817

APPLICATION FOR A RESIDENTIAL SITE IMPROVEMENT PERMIT/ CONSTRUCTION AUTHORIZATION FOR AN ON-SITE WASTEWATER SYSTEM, NEW WELL INSTALLATION, OR REPAIR OF EXISTING WELL

1. SEPTIC / TYPE APPLICATION: ☐ N/A ☑ NEW SYSTEM ☐ ALTERATION ☐ REPAIR ☐ MODIFIED PLOT PLAN

2. WELL / TYPE APPLICATION: ☐ N/A ☑ NEW WELL ☐ MAJOR REPAIR ☐ ABANDONMENT

3. JOB LOCATION INFORMATION:
TAX PARCEL NUMBER: 217-232-51
STREET ADDRESS: LOT 72B FOREST HOME RD
CITY: CHARLOTTE
STATE: NC ZIP: 28278
SUBDIVISION NAME:
LOT #: 72B LOT SIZE (acres): .75
TOWNSHIP:
☒ 0-MECKLENBURG ☐ 3-CORNELIUS ☐ 6-HUNTERSVILLE
☐ 1-CHARLOTTE ☐ 4-PINEVILLE ☐ 7-MINT HILL
☐ 2-DAVIDSON ☐ 5-MATTHEWS

4. BUILDING INFORMATION:
BUILDING TYPE:
☐ SINGLE MOBILE HOME ☐ MODULAR HOME
☐ DOUBLE WIDE ☐ MULTIPLE FAMILY
☑ HOUSE ☐ OTHER _____
HEATED SQUARE FOOTAGE:
NUMBER OF BEDROOMS: 4
NUMBER OF OCCUPANTS: 4
FOUNDATION TYPE:
☐ CONCRETE SLAB ☐ BASEMENT WITH PLUMBING
☑ CRAWL SPACE ☐ BASMENT WITH NO PLUMBING

5. IF PLANNING TO EXPAND OR ALTER THE EXISTING SEPTIC SYSTEM PLEASE COMPLETE THE FOLLOWING SECTION: ☐ N/A

NUMBER OF BEDROOMS TO BE ADDED: 4 NUMBER OF ADDITIONAL OCCUPANTS IN THE RESIDENCE: _____

6. WATER SUPPLY: ☐ MUNICIPAL ☑ PRIVATE WELL ☐ PUBLIC WELL ☐ SHARED WELL ☐ OTHER _____

7. PROPOSED USE OF WELL: ☐ N/A ☐ IRRIGATION ☑ POTABLE (DRINKING WATER) ☐ OTHER _____

8. PLEASE INDICATE AND RANK DESIRED SEPTIC SYSTEM TYPE(S) IN ORDER OF PREFERENCE *(1-MOST DESIRED 5-LEAST DESIRED)*:

☐ N/A ☑ ANY TYPE ☑ CONVENTIONAL ☑ ACCEPTED ☐ INNOVATIVE ☐ ALTERNATIVE ☐ OTHER _____

8A. RANK: 1 2 ___ ___ ___

9. DO ANY OF THE FOLLOWING APPLY TO THE PROPERTY IN QUESTION? IF "YES" PLEASE ATTACH SUPPORTING DOCUMENTATION.

BURIED CABLES, LANDFILLS, STUMPHOLES	☐ YES	☑ NO	GRADING/SOIL REMOVAL PERFORMED	☐ YES	☑ NO
EXISTING WASTEWATER (SEPTIC) SYSTEMS	☐ YES	☑ NO	JURISDICTIONAL WETLANDS	☐ YES	☑ NO
WELLS, SPRINGS, OR WATER LINES	☐ YES	☑ NO	APPROVAL REQUIRED BY ANY OTHER PUBLIC AGENCY	☐ YES	☑ NO
EASEMENTS OR RIGHT-OF-WAYS	☐ YES	☑ NO	WASTEWATER OTHER THAN DOMESTIC SEWAGE	☐ YES	☑ NO
CHEMICAL/PETROLEUM STORAGE TANKS	☐ YES	☑ NO	KNOWN UNDERGROUND CONTAMINATION	☐ YES	☑ NO
WASTE STORAGE	☐ YES	☑ NO	GROUNDWATER USE RESTRICTIONS/VARIANCES	☐ YES	☑ NO

10. WHAT DATE WAS THE PROPERTY ORIGINALLY DEEDED AND RECORDED? _____ ☑ UNKNOWN

11. WHAT IS THE ANTICIPATED CLOSING DATE FOR THIS PROPERTY? 11/30/10 ☐ N/A

12. PROPERTY OWNER:
NAME: JAMES G. SAMSON
ADDRESS: 16409 RED FEZ CLUB
CITY: CHARLOTTE
STATE: NC ZIP: 28278
HOME PHONE:
WORK PHONE:
MOBILE PHONE: 980-297-9163
FAX:

13. OW
NAME:
ADDRE
CITY:
STATE:
HOME
WORK
MOBIL
FAX:

COTTINGHAM CHALK HAYES
Diane W. Cain
REALTOR®/Broker
Mobile: 704.904.6780
Direct: 704.364.4400 x259
Fax: 704.625.1863
dcain@cchrealtors.com
www.cchrealtors.com
6846 Morrison Boulevard, Charlotte, NC 28211

0701 0152

14. SEPTIC SYSTEM PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Improvement Permit and Authorization to Construct shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for either sixty (60) months or is non-expiring depending upon the documentation submitted: complete site plan = 60 months, complete plat = non-expiring.

JW (initial here for septic system applications)

15. WELL PERMIT APPLICATION:

If the information in this application is falsified, changed, or the site is altered, then the Well Permit shall become invalid. I have read this application and certify that the information provided herein is true, complete and correct. Authorized county and state officials are granted right of entry to conduct necessary inspections to determine compliance with applicable laws and rules. I understand that I am solely responsible for the proper identification and labeling of all property lines and corners and making the site accessible so that a complete site evaluation can be performed. The permit is valid for a period of twelve (12) months from the date of issuance.

JW (initial here for well applications)

16. APPLICATION SIGNATURE SECTION:

ONLY COMPLETE APPLICATIONS WILL BE PROCESSED. A proper signature is required in order to process your application. Please review the application carefully and sign in the space provided below.

James W Jones — 10/25/10

Property Owner's or Owner's Legal Representative Signature — Date

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OFFICE USE ONLY

☐ SURVEY PLAT TO SCALE SUBMITTED ☐ SCALED SITE PLAN SUBMITTED ☐ UN-SCALED SITE PLAN SUBMITTED

SEPTIC APPLICATION FEES RECEIVED: $ 250 chk 4100 DATE FEE RECEIVED: 10/25/10

WELL APPLICATION FEES RECEIVED: $ 550 chk 4100 DATE FEE RECEIVED: 10/25/10

APPLICATION PROCESSED BY: SC

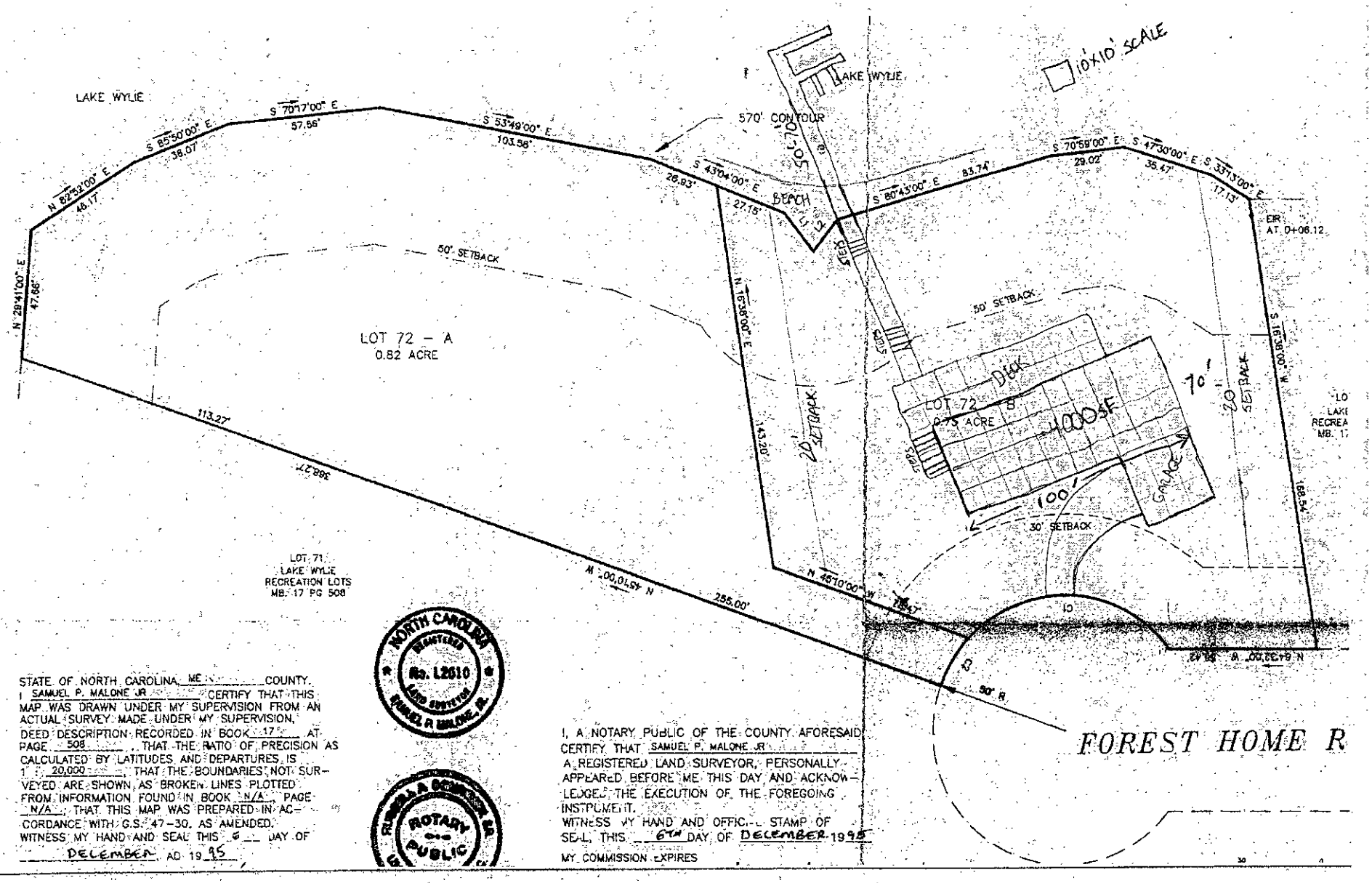
GWS FILE NUMBER ASSIGNED: 14004

APPLICATION ID NUMBER ASSIGNED: 4817

COMMENTS:

MECKLENBURG COUNTY – GROUNDWATER & WASTEWATER SERVICES
700 N. TRYON ST. SUITE 211 CHARLOTTE, NC 28202, OFFICE: 704-336-5103, FAX: 704-336-6894

File #
14004



STATE OF NORTH CAROLINA, ME COUNTY.
I SAMUEL P. MALONE JR CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION, DEED DESCRIPTION RECORDED IN BOOK 17 AT PAGE 508, THAT THE RATIO OF PRECISION AS CALCULATED BY LATITUDES AND DEPARTURES IS 1 : 20,000, THAT THE BOUNDARIES, NOT SURVEYED ARE SHOWN AS BROKEN LINES PLOTTED FROM INFORMATION FOUND IN BOOK N/A, PAGE N/A, THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH G.S. 47-30, AS AMENDED.
WITNESS MY HAND AND SEAL THIS 6 DAY OF DECEMBER, AD 1995

NORTH CAROLINA REGISTERED No. L2610 LAND SURVEYOR SAMUEL P. MALONE, JR.

RUBERA A SCHOOL R. ROTARY PUBLIC

I, A NOTARY PUBLIC OF THE COUNTY AFORESAID CERTIFY THAT SAMUEL P. MALONE JR A REGISTERED LAND SURVEYOR, PERSONALLY APPEARED BEFORE ME THIS DAY AND ACKNOWLEDGED THE EXECUTION OF THE FOREGOING INSTRUMENT.
WITNESS MY HAND AND OFFICIAL STAMP OF SEAL, THIS 6TH DAY OF DECEMBER 1995
MY COMMISSION EXPIRES

Owner signature _____ Date _____

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

Property ID: 217-232-51
Lot #: 72B
File #: 14004
AppID: 4817

SOIL/SITE EVALUATION for ON-SITE WASTEWATER SYSTEM

Owner: JAMES G. SAMSON
Applicant: DIANE CAIN, COTTINGHAM CHALK HAYES
Address: 16409 RED FEZ CLUB
Date Evaluated: 11/09/2010
Proposed Facility: RESIDENCE
Design Flow (1949): 480
Property Size: .75 ACRES
Location of Site: FOREST HOME RD
Property Recorded:
Water Supply: [ ] Public [x] Individual [ ] Well [ ] Spring [ ] Other
Evaluation Method: [X] Auger Boring [ ] 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
1	CC	0-12	GR/SCL	FR/SEXP/SS/SP	>48" TO SOIL WETNESS	48	NA	NONE	PS .25GPD/FT2
		12-26	FR/SCL	FR/SEXP/SS/SP					
		26-30	SL/SCL	FR/SEXP/SS/SP					
		30-48	SL/SCL	FR/SEXP/SS/SP					
2	LS	0-18	GR/SCL	FR/SEXP/SS/SP	>48 TO SOIL WETNESS	48	NA	NONE	PS .25GPD/FT2
		18-30	FR/SCL	FR/SEXP/SS/SP					
		30-48	SL/SCL	FR/SEXP/SS/SP					
3		0-25	FR/SCL	FR/SEXP/SS/SP	<48" TO SOIL WETNESS	48	NA	NONE	0.3GPD
		25-33	GR/SBK	FR/SEXP/SS/SP					
		33-48	SCL/SBK	FR/SEXP/SS/SP					
4		0-6	FR/SCL	FR/SEXP/SS/SP	<48" TO SOIL WETNESS	48	NA	NONE	0.3 GPD
		6-19-	GR/SBK	FR/SEXP/SS/SP					
		19-48	SCL/SBK	FR/SEXP/SS/SP					

Description	Inital System	Repair System
Available Space (.1945)	PS	PS
System Type(s)	IIIb	Iva
Site LTAR	0.3	0.3

Other Factors (.1946):
Soil Evaluation By: PHILO WALKER
Others Present:
Site Classification (.1948): PS
Site Evaluation By: PHILO WALKER
Others Present:

COMMENTS: I AGREE WITH SOIL EVALUATION AND Ksat CONDUCTED BY CONSULTANT . 3 LTAR FILE #: 17030

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
HS-Head Slope
CC-Concave Slope
CV-Convex Slope
T-Terrace
FP-Flood Plain

	L-Loam	
III	SI-Silt	0.6 - 0.3
	SICL-Silty Clay Loam	
	CL-Clay Loam	
	SCL-Sandy Clay Loam	
IV	SC-Sandy Clay	0.4 - 0.1
	SIC-Silty Clay	
	C-Clay	

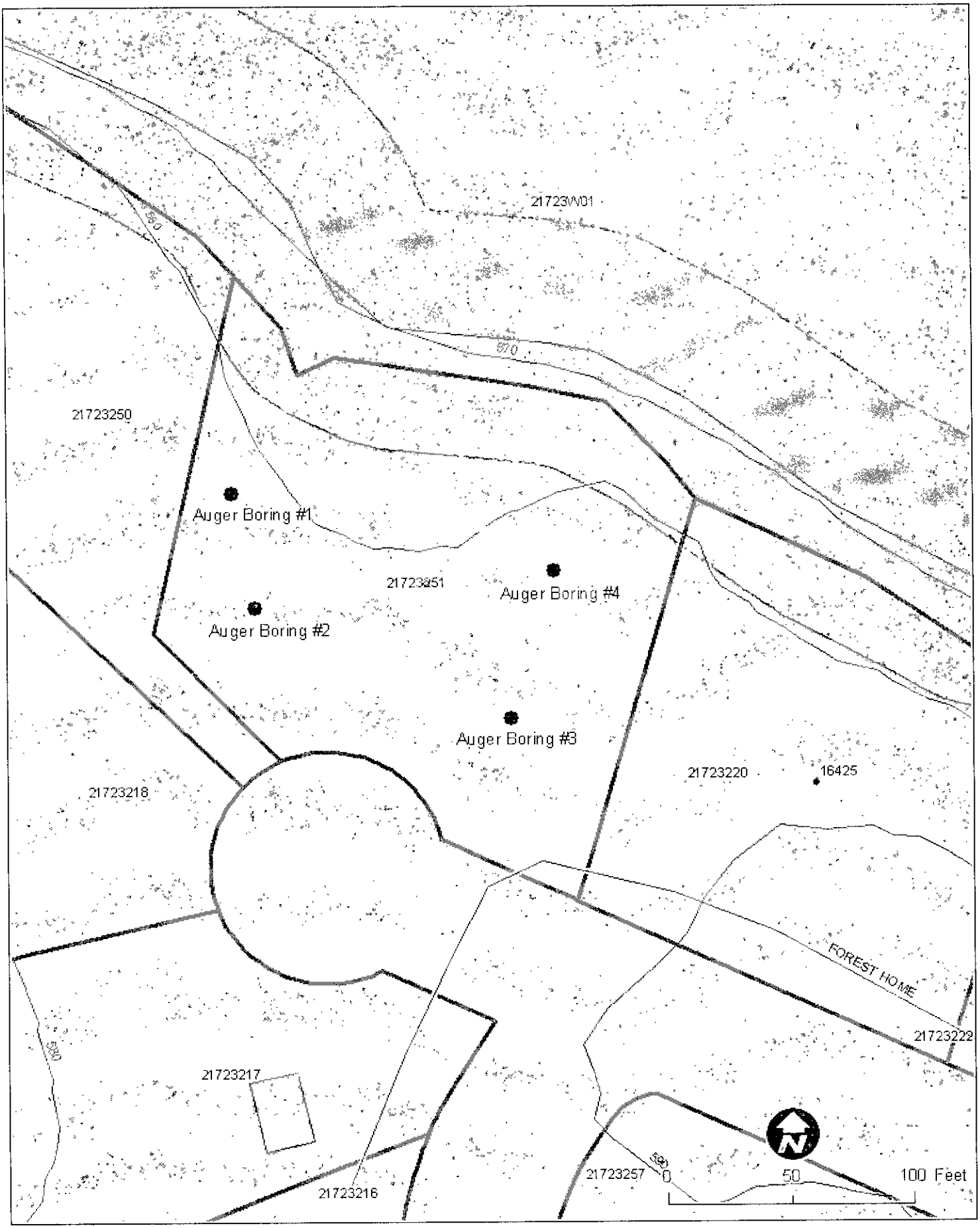
SBK-Subangular Blocky
ABK-Angular Blocky
PL-Platy
PR-Prismatic

Consistence
Moist
VFR-Very Friable
FR-Friable
FI-Firm
VFI-Very Firm
EFI-Extremely Firm

Consistence
Wet
NS-Non-Sticky
SS-Slightly Sticky
S-Sticky
VS-Very Sticky
NP-Non-Plastic
SP-Slightly Plastic
P-Plastic
VP-Very Plastic

Mineralogy
SEXP-Slightly Expansive
EXP-Expansive

SOIL EVALUATION LOCATIONS FOR
LOT 72B FOREST HOME RD. (PID: 217-232-51)



Residential Subsurface Wastewater Treatment and Disposal System Design

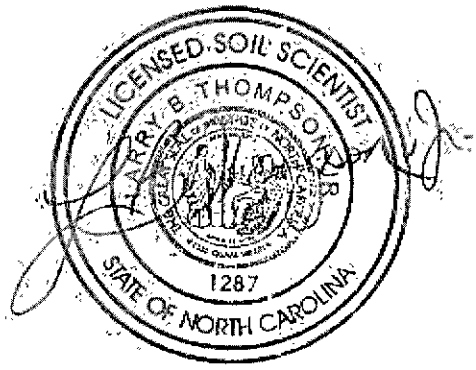
for

Lot 27B – Forest Home Road
Charlotte, North Carolina

Tax Parcel # 217-232-51
November 17, 2010

Prepared for:

Marc and Lauren Deshaies
% Diane Cain
6846 Morrison Boulevard
Charlotte, NC 28211



Prepared by:

Larry Thompson, REHS, PWS, LSS
Thompson Environmental Consulting, Inc.
114 Orchard Ridge Road
Locust, NC 28097-8748
Phone: 704-301-4881
Fax: 704-888-1496
info@thompsonenv.com



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

Details

Mr. and Mrs. Deshaies has contracted with Thompson Environmental Consulting, Inc. (TEC) to prepare a septic proposal for a new 4-bedroom single family residence to be located on Forest Home Road (Lot 72-B) in Charlotte, North Carolina.

Based upon a detailed soils investigation performed by TEC on the 0.75 acre lot, it was determined that a sufficient amount of "Suitable" Group III soils were available for the installation of a Type III accepted system (25% reduction with a Pre-fabricated Porous Block Panel System) for a 4-bedroom residence served by a private well.

Mr. and Mrs. Deshaies would like to request that Mecklenburg County Groundwater and Wastewater Services (MCGWS) consider issuing the appropriate permits for a subsurface wastewater treatment and disposal system based upon the following proposal.

Location

The subject property is located on Forest Home Road in Charlotte, North Carolina. From downtown Charlotte, travel south on NC 49 approximately 17 miles. Turn left onto Sheherlia Road and take a slight right onto Walnut Hill Drive. Turn right onto Tulloch Road and travel approximately 0.2 of a mile. Turn right onto Gardenside Lane and right onto Forest Home Road. Lot 72-B is on the right in the cul-de-sac.

References

Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, August 2007.

Accepted Wastewater System No. AWWS-05-01; North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, April 2, 2005.

Accepted Wastewater System No. AWWS-05-02-R1; North Carolina Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, April 2, 2005.

Primary Investigator's Credentials

NC Registered Sanitarian No. 1208
NC Licensed Soil Scientist No. 1287
Professional Wetland Scientist No. 1346
NC Subsurface Septic System Operator No. 22199
NC Grade IV Wastewater System Installer No. 1762
NC Certified Wastewater System Inspector No. 17621

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 and riser for easy access and periodic maintenance.
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. Pump Tank

1. The pump tank shall be State approved, of one-piece construction, watertight, structurally sound and 1000 gallons in capacity. Again, it is the responsibility of the septic tank contractor to thoroughly inspect each pump tank prior to accepting delivery.
2. All pipe penetrations into the tank shall be booted (i.e., C-293 boot with a stainless steel strap).
3. The pump tank shall have access risers that extend, at a minimum, 6 inches above finished grade and must have less than 36 inches of fill over its top once finished grade has been established (a reinforced concrete tank will be required if finished soil cover is 36 inches or greater in depth).
4. Floats, pump and control circuits, and the control panel shall meet the requirements of Rule .1952(c). Panel and control equipment shall include lightning protection, be protected from unauthorized access, and remain accessible at all times to the system operator.
5. The pump and alarm controls shall be provided with manual circuit disconnects within a watertight, corrosion resistant, Nema 4x rated control panel. The control panel must be securely mounted outside, adjacent to the pump tank riser and at a minimum of 12 inches above finished grade. Pump and float control wiring should be long enough to reach from the tank to the control panel without splicing, routed through wire conduit, and sealed at the openings within the pump tank as well as the control panel enclosure. It is paramount that the conduit is properly sealed to prevent the escape of flammable gases from the pump tank. Furthermore, there must be two electrical circuits for the pump tank controls: one for the pump and one for the alarm controls.
6. Float switch tie downs must be made of a corrosion resistant material (all metal in the tanks shall be stainless steel). Floats should be mounted on a separate "float tree" rather than the pump supply line (see pump tank detail).
7. The pump removal system will be via a pump tether made of nylon rope or its equivalent. The tether material should be resistant to mildew and rot.

C. 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.
3. The supply line shall be constructed of 2 inch SCH 40 PVC (approximately 65 linear feet).

D. Pressure Manifold

1. A pressure manifold shall be used to distribute wastewater equally to each of the drainlines.
2. The pressure manifold shall be contained within an adequately sized box/vault that will allow future repair lines to be installed and is designed to allow for drainage of effluent that may accumulate in it during flushing and head pressure adjustments. The box should be placed upon a gravel base.
3. A gate valve shall be provided at the pressure manifold box to allow for final pressure adjustment (2 foot of head pressure as per design).
4. The pressure manifold shall be constructed of SCH 80 PVC.
5. There shall be 4 taps (SCH. 80 PVC - direct thread or saddle), ½ inch in diameter, each to have a true union ball valve that will allow for future removal/replacement. NOTE: Using SCH 40 taps will increase the required pump delivery rate beyond that which is specified in this design.
6. The connecting pipe between the Pressure Manifold taps and the drain field shall be constructed of PVC.

E. Drain Field Installation

1. The drainfield has been previously laid out on-site utilizing metal stemmed flags. Once this area has been approved by the MCGWS, the property owner/builder should mark this area and isolate it as much as possible from construction traffic. Prior to the system installation, the septic contractor shall contact the MCGWS and the system designer for a preconstruction conference at which time the drain field area will be re-verified.
2. Under no circumstances shall any construction take place within the drain field area while the soil is in a wet condition. If the installer has doubts as to whether or not the drain field area is dry enough to begin construction, the MCGWS should be contacted for permission to proceed with the installation.
3. The specified system is a shallow placed approved accepted system; the **EZ*flow* 1203H** or the **Infiltrator Quick4 Standard Chamber System** may be used (other innovative systems may be substituted with prior approval by the MCGWS).
4. The drain field consists of five (5) lateral trenches to be constructed 3 foot wide by 80 feet in length.
5. The maximum trench depth for this system shall be **36 inches**.

6. The laterals are to be installed on contour with the land, keeping the individual trench bottoms level from beginning to end.
7. The trenches should be left open for the final inspection by the MCGWS.

F. Final Landscaping

1. Final cover over the drainfield shall be at least 6 inches deep.
2. The drainfield shall be shaped to shed rainwater and be free from low spots.
3. 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.

G. 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

H. 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.

I. 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 (2 compartments)
Pump Tank Size:	1000 gallons (one piece const.)
Effluent Loading Rate:	Design = 0.3 GPD per sq. ft. (see attached K_{sat} report)
Drain Field Type:	Accepted 25% Reduction
Supply Line:	+/- 65 Feet (2 inch SCH 40)
Distribution Method:	Pressure Manifold (SCH 80)
Number of Taps and Size:	(5) ½ inch SCH 80 Taps
Drain Lines:	(5) 3' Wide x 80' Long
Maximum Trench Depth:	36 inches
Final Cover Requirement:	6 inches (minimum)
Pump Requirements:	27.4 GPM at 13 Feet TDH
Pump Specified:	Goulds WE03L (or equivalent)
Check Valve Required:	Yes

Thompson Environmental Consulting, Inc.
114 Orchard Ridge Road
Locust, NC 28097-8748
704-301-4881

SHEET 1 OF 1

COUNTY: Mecklenburg
TAX ID: 217-232-51

OWNER: James G. Samson
LOCATION: Lot 72B - Forest Home Road

DATE: November 13, 2010

PROFILES		SB-1	SB-2	SB-3	Ksat 1	Ksat 2	Ksat 3				
LANDSCAPE POSITION	.1940	ls	ls	ls	ls	ls	ls				
SLOPE (%)	.1940	5%	5%	5%	5%	5%	5%				
HORIZON 1 DEPTH	.1943	0-25	0-5	0-6	0-10	0-8	0-6				
TEXTURE	.1941 (a)(1)	sl	sl	sl	sl	sl	sl				
CONSISTENCE	.1941	fr	fr	fr	fr	fr	fr				
STRUCTURE	.1941 (a)(2)	gr	gr	gr	gr	gr	gr				
CLAY MINERALOGY	.1941 (a)(3)	-	-	-	-	-					
HORIZON 2 DEPTH	.1943	25-33	5-15	6-19	10-18	8-17	6-19				
TEXTURE	.1941 (a)(1)	scl	scl	scl	scl	scl	scl				
CONSISTENCE	.1941	fr	fr	fr	fr	fr	fr				
STRUCTURE	.1941 (a)(2)	sbk	sbk	sbk	sbk	sbk	sbk				
CLAY MINERALOGY	.1941 (a)(3)	se	se	se	se	se	se				
HORIZON 3 DEPTH	.1943	33-49+	15-50+	19-49+	18-41+	17-40+	19-36+				
TEXTURE	.1941 (a)(1)	scl	scl	scl	scl	scl	scl				
CONSISTENCE	.1941	fi	fi	fi	fi	fi	fi				
STRUCTURE	.1941 (a)(2)	sbk	sbk	sbk	sbk	sbk	sbk				
CLAY MINERALOGY	.1941 (a)(3)	se	se	se	se	se	se				
HORIZON 4 DEPTH	.1943										
TEXTURE	.1941 (a)(1)										
CONSISTENCE	.1941										
STRUCTURE	.1941 (a)(2)										
CLAY MINERALOGY	.1941 (a)(3)										
SOIL WETNESS	.1942										
RESTRICTIVE HORIZON	.1944										
SAPROLITE	.1943/.1956										
CLASSIFICATION	.1948	s	s	s	s	s	s				
L.T.A.R. (gpd/ft^2)	.1955	0.3	0.3	0.3	0.3	0.3	0.3				

OTHER FACTORS (.1946):		**SITE LTAR (gpd/ft^2):**	**0.3**
AVAILABLE SPACE (.1945):	provisionally suitable		
SITE CLASSIFICATION (.1948):	provisionally suitable	SYSTEM TYPE:	25% Reduction/PPBPS Repair
EVALUATED BY:	Larry Thompson	OTHERS PRESENT:	

COMMENTS: *0.3 LTAR recommended based upon saturated hydraulic conductivity testing.

THOMPSON ENVIRONMENTAL CONSULTING, INC.
WATER ♦ WASTEWATER ♦ WETLANDS

HYDRAULIC CONDUCTIVITY EVALUATION

Lot 72B – Forest Home Drive
Tax Record: 217-232-51
Charlotte, North Carolina

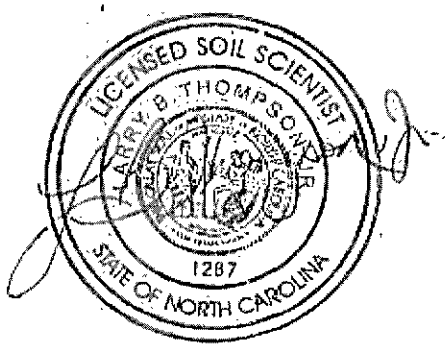
Prepared For:

Marc and Lauren Deshaies
% Diane Cain
6846 Morrison Boulevard
Charlotte, NC 28211

Prepared By:

Thompson Environmental Consulting, Inc.
114 Orchard Ridge Road
Locust, NC 28097-8748

November 13, 2010



114 ORCHARD RIDGE ROAD • LOCUST, NC • 28097-8748
PHONE: 704-301-4881 • FAX: 704-888-1496
E-MAIL: LARRY@THOMPSONENV.COM
WEB: WWW.THOMPSONENV.COM

INTRODUCTION

The following Saturated Hydraulic Conductivity report is submitted to assist in a site assessment for Lot 74B – Forest Home Road, a 0.75 acre lot located in Charlotte, North Carolina. The property is currently undeveloped and vegetated by a mixed deciduous forest.

A soil and site evaluation was conducted on the property Thompson Environmental Consulting on November 13, 2010. The evaluation revealed soil depths that were in excess of 48-inches in depth. Surface textures were recorded as sandy loam, exhibiting granular structure, and subsurface textures were recorded as sandy clay loam, exhibiting sub-angular blocky structure.

INVESTIGATION AND METHODOLOGY

Three in-situ saturated hydraulic conductivity tests were performed on the lot in order to determine the assimilative capacity of the soils within the most restrictive horizon observed during TEC's soil evaluation. The tests were conducted in the Bt, and BC soil horizons utilizing a compact constant-head permeameter (Amoozemeter) to measure their respective K_{sat} values.

A Trimble Geo XT hand held global positioning system (GPS) with sub-meter accuracy was used to locate each K_{sat} location (see the enclosed Septic Layout).

RESULTS

The geometric mean of the measured conductivities is 3.174 gpd/ft^2.

Typically 4 – 10% of the measured K_{sat} is taken for the final loading rate or long-term acceptance rate (LTAR) of the soils. In this case, TEC is proposes an LTAR of 0.3 gpd/ft^2 which is approximately 9.5% of the measured K_{sat}.

It is anticipated that an LTAR of 0.3 gpd/ft^2 will be well within the assimilative capacity of the sandy clay loam soil found on this lot.

HYDRAULIC CONDUCTIVITY STUDY
Forest Home Road - Lot 72B

Date: 11/13/2010
Location: Ksat 1

SET UP

	cm	inches
Hole Depth (cm):	104.1	41.0
Reference (cm):	+ 11.4	4.5
Head (cm):	- 15.2	6.0
CHT Tube(s) setting:	= 100.3	

Valve Setting: x (1-ON 2-ON)

	cm	inches
Target Water Level:	88.9	35.0
Beginning Water Level:	88.9	35.0
Ending Water Level:	88.9	35.0

Hole diameter (cm): 5.0
Hole radius (r): 2.5
coefficient A: 0.0011362

NOTE: Readings based on Ending Water Level

Coversion Factor (C.F.): 20.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
41	0.0	20.0	60.0						
38.7	2.3	20.0	65.0	5.00	0.083	552.0	0.6272	0.2469	3.694
36.5	2.2	20.0	70.0	5.00	0.083	528 0	0.5999	0.2362	3.534
34.3	2.2	20.0	75.0	5.00	0.083	528.0	0.5999	0.2362	3.534
32.3	2.0	20.0	80.0	5.00	0.083	480.0	0.5454	0.2147	3.213
30.3	2.0	20.0	85.0	5.00	0.083	480.0	0.5454	0.2147	3.213
28.3	2.0	20.0	90.0	5.00	0.083	480.0	0.5454	0.2147	3.213
26.3	2.0	20.0	95.0	5.00	0.083	480.0	0.5454	0 2147	3.213
						Final Ksat	**0.545**	**0.215**	**3.213**

HYDRAULIC CONDUCTIVITY STUDY
Forest Home Road - Lot 72B

Date: 11/13/2010
Location: Ksat 2

SET UP

	cm	inches
Hole Depth (cm):	101.6	40.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 15.2	6.0
CHT Tube(s) setting:	= 96.5	

Valve Setting: x (1-ON 2-ON)

	cm	inches
Target Water Level:	86.4	34.0
Beginning Water Level:	86.4	34.0
Ending Water Level:	83.8	33.0

Hole diameter (cm): 5.0
Hole radius (r): 2.5
coefficient A: 0.0009015

NOTE: Readings based on Ending Water Level

Coversion Factor (C.F): 20.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	Elapsed Time (hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
43	0.0	20.0	70.0						
40	3.0	20.0	75.0	5.00	0.083	720.0	0.6491	0.2555	3.823
36.9	3.1	20.0	80.0	5.00	0.083	744.0	0.6707	0.2641	3.951
34	2.9	20.0	85.0	5.00	0.083	696.0	0.6274	0.2470	3.696
31.3	2.7	20.0	90.0	5.00	0.083	648.0	0.5842	0.2300	3.441
28.6	2.7	20.0	95.0	5.00	0.083	648.0	0.5842	0.2300	3.441
25.9	2.7	20.0	100.0	5.00	0.083	648.0	0.5842	0.2300	3.441
23.2	2.7	20.0	105.0	5.00	0.083	648.0	0.5842	0.2300	3.441
						Final Ksat	**0.584**	**0.230**	**3.441**

HYDRAULIC CONDUCTIVITY STUDY
Forest Home Road - Lot 72B

Date: 11/13/2010
Location: Ksat 3

SET UP

	cm	inches
Hole Depth (cm):	91.4	36.0
Reference (cm):	+ 10.2	4.0
Head (cm):	- 15.2	6.0
CHT Tube(s) setting:	= 86.4	

Valve Setting: x (1-ON, 2-ON)

	cm	inches
Target Water Level:	76.2	30.0
Beginning Water Level:	76.2	30.0
Ending Water Level:	76.2	30.0

Hole diameter (cm): 5.0
Hole radius (r): 2.5
coefficient A: 0.0011362

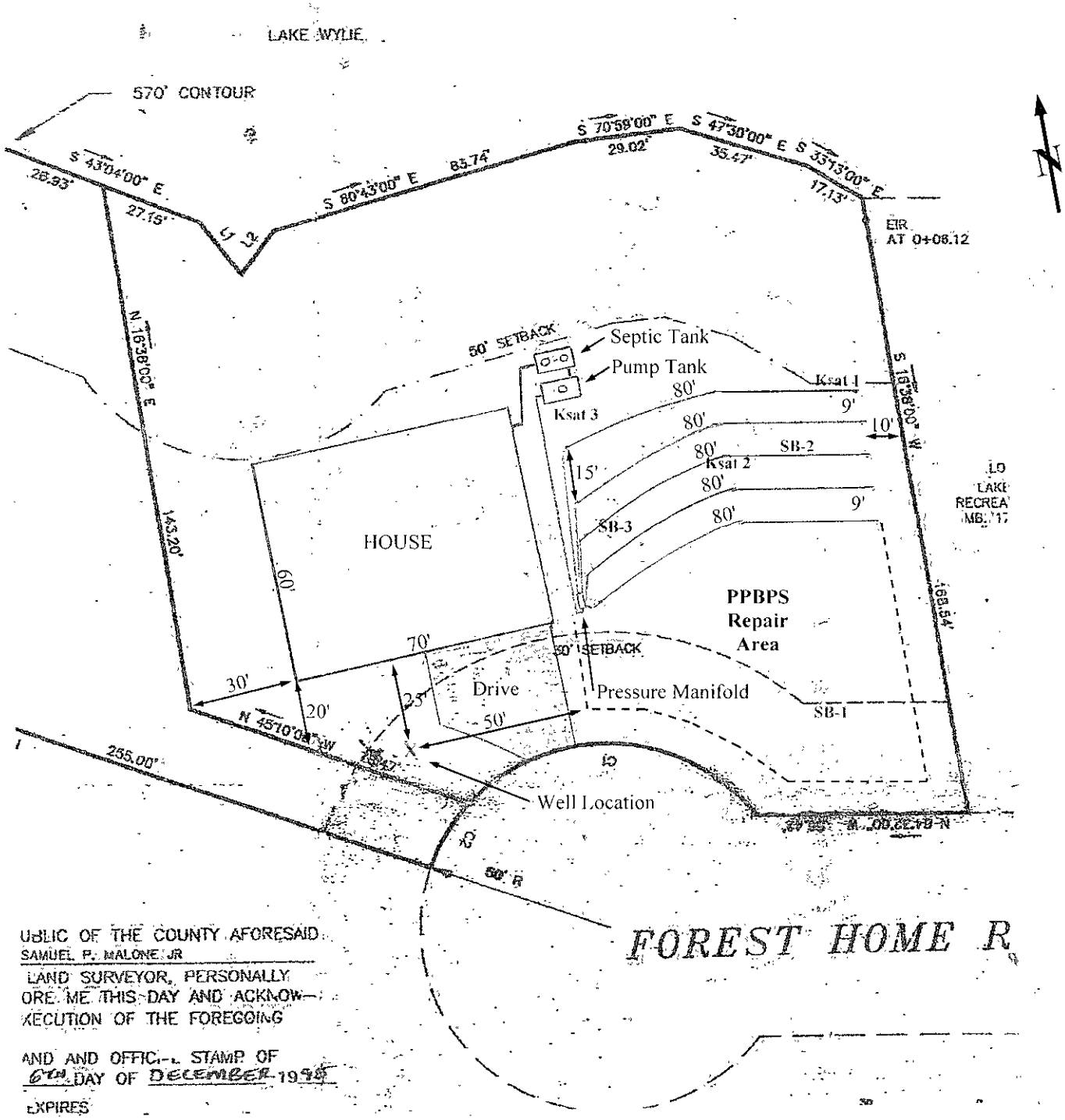
NOTE: Readings based on Ending Water Level

Coversion Factor (C.F.): 20.0

Water Reading	change in water level	Chamber C.F.	clock time (min)	Elapsed Time (min)	(hr)	Q (cm3/hr)	K (cm/hr)	K (in/hr)	K (gpd/sq foot)
31.7	0.0	20.0	62.0						
29.8	1.9	20.0	67.0	5.00	0.083	456.0	0.5181	0.2040	3.052
27.8	2.0	20.0	72.0	5.00	0.083	480.0	0.5454	0.2147	3.213
26	1.8	20.0	77.0	5.00	0.083	432.0	0.4909	0.1932	2.891
24.2	1.8	20.0	82.0	5.00	0.083	432.0	0.4909	0.1932	2.891
22.4	1.8	20.0	87.0	5.00	0.083	432.0	0.4909	0.1932	2.891
20.6	1.8	20.0	92.0	5.00	0.083	432.0	0.4909	0.1932	2.891
18.8	1.8	20.0	97.0	5.00	0.083	432.0	0.4909	0.1932	2.891
						Final Ksat	**0.491**	**0.193**	**2.891**

		Average	GeoMean	Percent of Geometric Mean 4	10	25
Ksat 1	3.213	3.182	3.174	0.13	0.32	0.79
Ksat 2	3.441					
Ksat 3	2.891					

0.3 gpd/ft^2 = 9.5% of the geometric mean of the measured Ksat



UBLIC OF THE COUNTY AFORESAID
SAMUEL P. MALONE, JR
LAND SURVEYOR, PERSONALLY
ORE ME THIS DAY AND ACKNOW-
XECUTION OF THE FOREGOING

AND AND OFFICIAL STAMP OF
6TH DAY OF DECEMBER 1995
EXPIRES

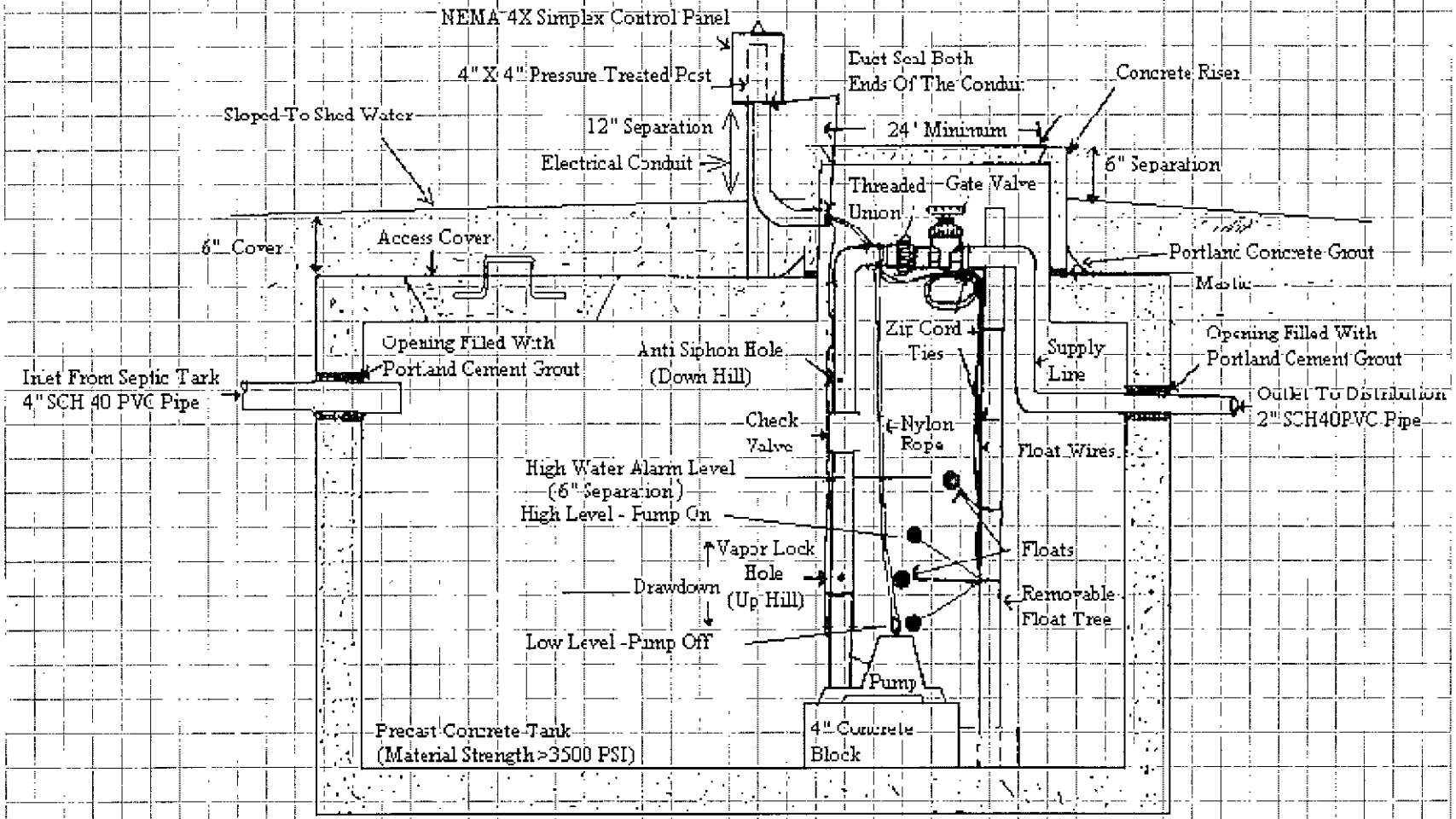
Lot 72-B

Scale: 1 inch = 40 feet

Thompson Environmental Consulting

WATER · WASTEWATER · WETLANDS

Recommended Pump Tank Design
Lot 72B - Forest Home Road



Thompson Environmental Consulting
114 Orchard Ridge Road
Locust, NC 28097-8748

Tax ID Number: 217-232-51

Location: Lot 72B - Forest Home Road

Date: November 13, 2010

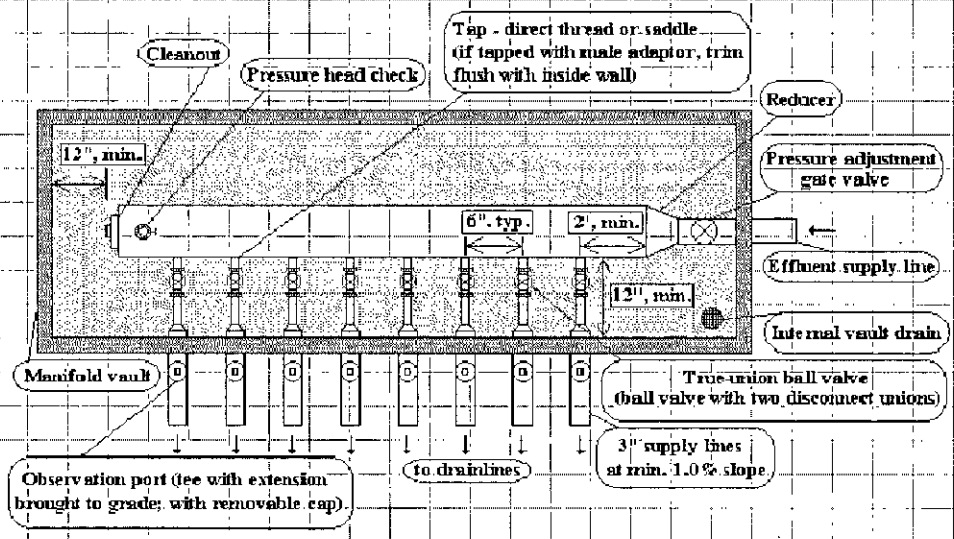
Thompson Environmental Consulting, Inc.
114 Orchard Ridge Road
Locust, NC 28097

Tax ID Number: 217-232-51

Location: Lot 72B - Forest Home Road

Date: November 13, 2010

Recommended Pressure Manifold Design



GOULDS PUMPS



Submersible Effluent Pump

MODEL 3885

WE Series

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump

- Solids handling capabilities: ¾" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

FEATURES

■ **Impeller:** Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

■ **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge.

■ **Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE** sealing faces. Stainless steel metal parts, BUNA-N elastomers.

■ **Shaft:** Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

■ **Fasteners:** 300 series stainless steel.

■ Capable of running dry without damage to components.

■ Designed for continuous operation when fully submerged.

MOTORS

■ Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.

■ Class B insulation on ⅓-1½ HP models.
■ Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ⅓ and ½ HP models have NEMA three prong grounding plugs.
- ¾ HP and larger units have bare lead cord ends.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.

■ **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

■ **Bearings:** Upper and lower heavy duty ball bearing construction.

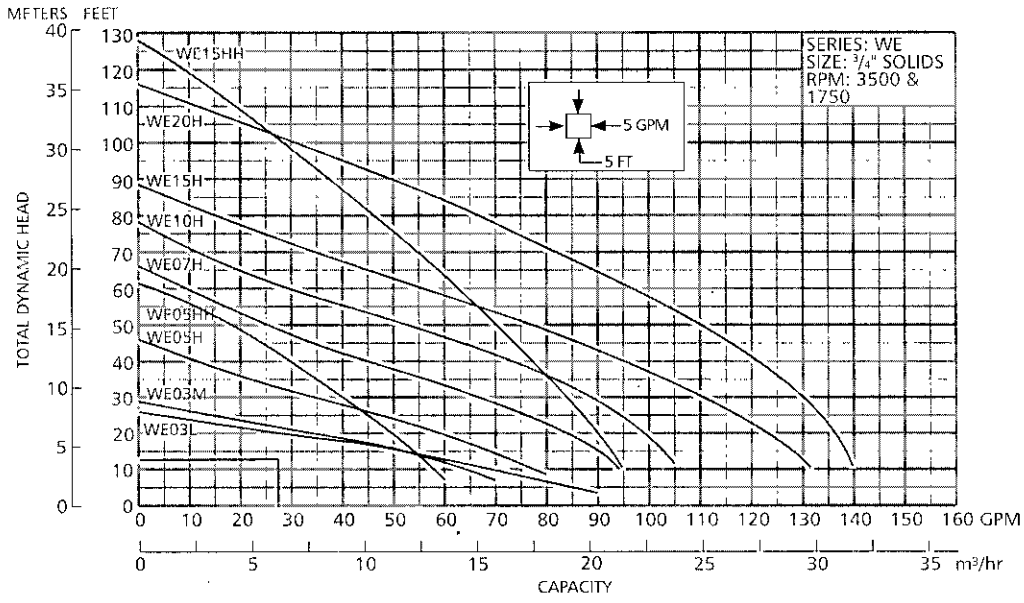
■ **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.

■ **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards By Canadian Standards Association File #LR38549

Goulds Pumps is ISO 9001 Registered.



Goulds Pumps

ITT Industries

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Effective July, 2003
B3885

GOULDS PUMPS

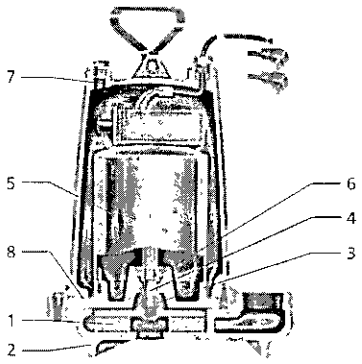
Submersible Effluent Pump

MODEL 3885

WE Series

COMPONENTS

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing O-Ring



MODELS

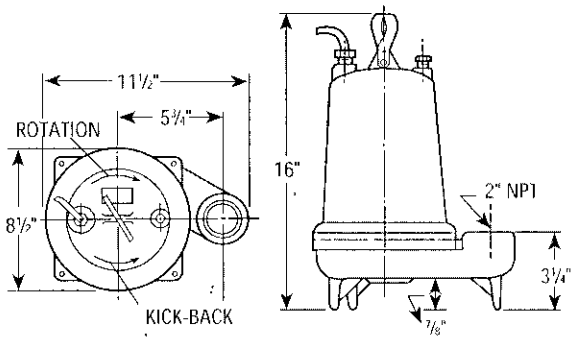
Order No.	HP	Volts	Phase	Max. Amp.	RPM	Solids	Wt. (lbs.)
WE0311L	1/3	115	1	10.7	1750	3/4"	56
WE0318L		208		6.8			
WE0312L		230		4.9			
WE0311M		115		10.7			
WE0318M		208		6.8			
WE0312M		230		4.9			
WE0511H	1/2	115	1	14.5	3500		60
WE0518H		208		8.1			
WE0512H		230		7.3			
WE0538H		200	3	4.9			
WE0532H		230		3.3			
WE0534H		460		1.7			
WE0537H		575		1.4			
WE0511HH		115	1	14.5			
WE0518HH		208		8.1			
WE0512HH		230		7.3			
WE0538HH		200	3	4.9			
WE0532HH		230		3.6			
WE0534HH		460		1.8			
WE0537HH		575		1.5			
WE0718H	3/4	208	1	11.0			70
WE0712H		230		10.0			
WE0738H		200	3	6.2			
WE0732H		230		5.4			
WE0734H		460		2.7			
WE0737H		575		2.2			
WE1018H	1	208	1	14.0			
WE1012H		230		12.5			
WE1038H		200	3	8.1			
WE1032H		230		7.0			
WE1034H		460		3.5			
WE1037H		575		2.8			
WE1518H	1 1/2	208	1	17.5			80
WE1512H		230		15.7			
WE1538H		200	3	10.6			
WE1532H		230		9.2			
WE1534H		460		4.6			
WE1537H		575		3.7			
WE1518HH		208	1	17.5			
WE1512HH		230		15.7			
WE1538HH		200	3	10.6			
WE1532HH		230		9.2			
WE1534HH		460		4.6			
WE1537HH		575		3.7			
WE2012H	2	230	1	18.0			83
WE2038H		200	3	12.0			
WE2032H		230		11.6			
WE2034H		460		5.8			
WE2037H		575		4.7			

PERFORMANCE RATINGS (gallons per minute)

Order No.		WE03L	WF03M	WE05H	WE07H	WE10H	WE15H	WE05HH	WE15HH	WE20H
	HP	1/3	1/3	1/2	3/4	1	1 1/2	1/2	1 1/2	2
	RPM	1750	1750	3500	3500	3500	3500	3500	3500	3500
Total Head Feet of Water	5	86	–	–	–	–	–	–	–	–
	10	70	63	78	–	–	–	58	–	–
	15	52	50	70	90	–	–	53	–	–
	20	27	35	60	83	98	123	49	90	136
	25	–	–	48	76	94	117	45	87	133
	30	–	–	35	67	88	110	40	83	130
	35	–	–	20	57	82	103	35	80	126
	40	–	–	–	45	74	95	30	77	121
	45	–	–	–	35	64	86	25	74	116
	50	–	–	–	25	53	77	–	70	110
	55	–	–	–	–	40	67	–	66	103
	60	–	–	–	–	30	56	–	63	96
	65	–	–	–	–	20	45	–	58	89
	70	–	–	–	–	–	35	–	55	81
	75	–	–	–	–	–	25	–	51	74
	80	–	–	–	–	–	–	–	47	66
	90	–	–	–	–	–	–	–	37	49
	100	–	–	–	–	–	–	–	28	30

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



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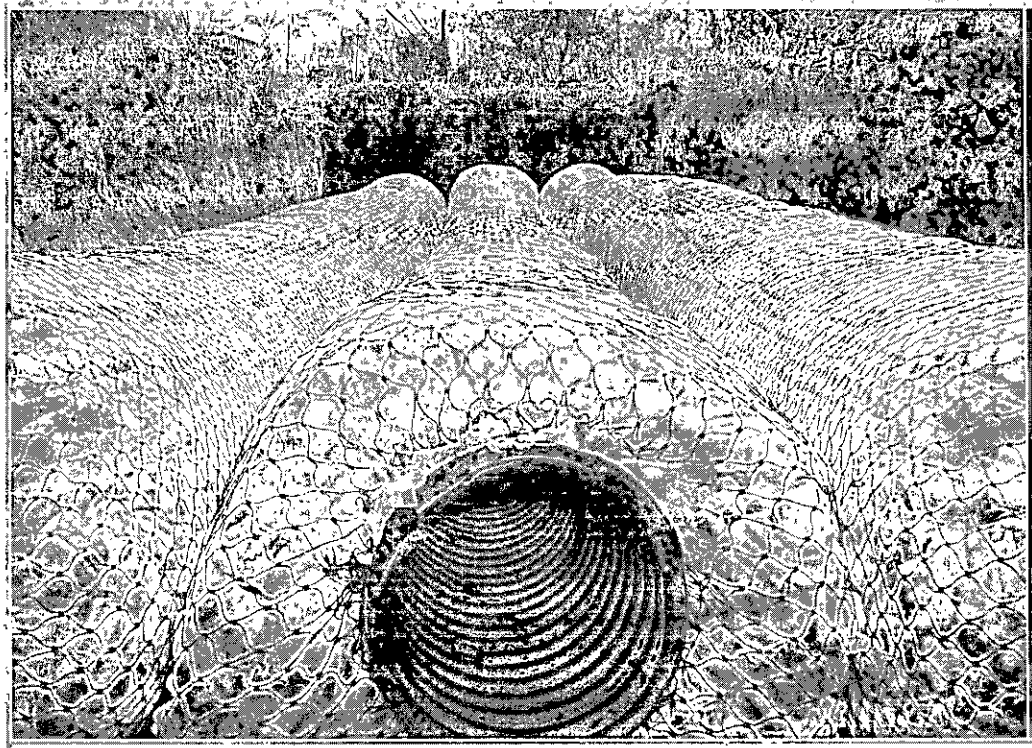
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SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Goulds Pumps

ITT Industries

EZflow by INFILTRATOR



EZflow by Infiltrator is an environmentally friendly replacement to traditional stone and pipe drainfields using an engineered geosynthetic aggregate modular design. The **EZflow** 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:

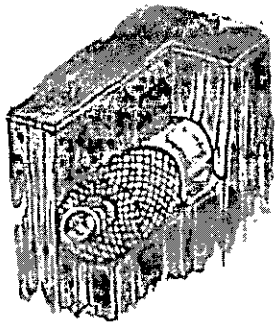
- Always clean and free of fines
- Bundles are quick to install, saving costs on heavy machinery and labor
- Modular construction allows configurations to match trench dimensions for most system shapes and sizes
- Engineered for optimal storage and absorption efficiencies
- Ability to contour along sloped 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

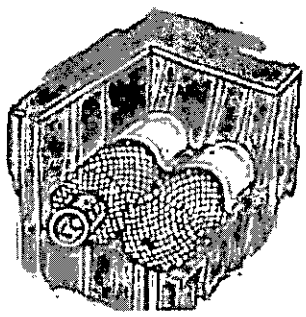
EZflow™ by INFILTRATOR

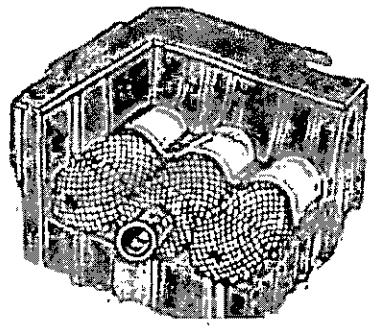
For technical assistance, installation instructions or customer service, call Infiltrator Systems at 800.689.7759.

EZflow by INFILTRATOR

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





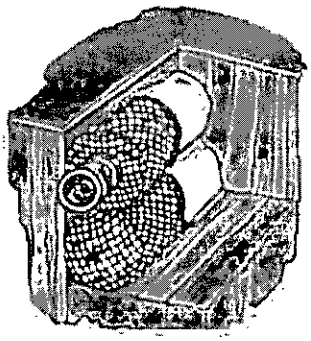


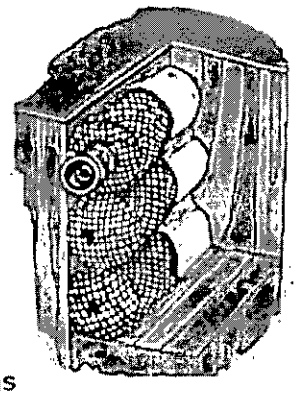
Single Pipe Systems

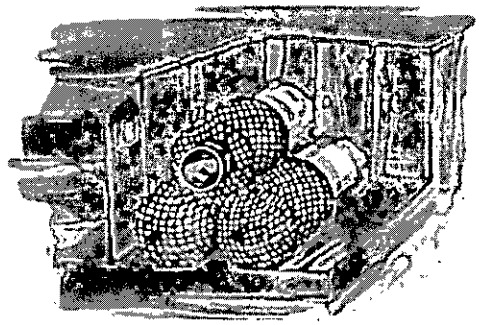
0701P-GEO
0801P-GEO
1001P-GEO
1001LPP-GEO
1201P-GEO
1201LPP-GEO
1401P-GEO

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 industrial polystyrene drainfield system and other accessories manufactured by EZflow by Infiltrator (collectively, "Units") when installed and operated in accordance with Infiltrator's instructions is warranted to the original owner ("Holder") against defective materials and workmanship for one year from the date that the septic system is placed into service containing the Units provided, however, that if a septic permit is required and issued by the septic authority, this warranty shall begin upon the date that installation of the septic system commences. To exercise this warranty right, Holder must notify Infiltrator in writing at its Corporate Headquarters in Old Saybrook, Connecticut within three (3) days after the alleged defect. Infiltrator will supply replacement Units for Units determined 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) THESE LIMITED WARRANTY REMEDIES 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. This Limited Warranty does not extend to incidental, consequential, special or exemplary damages. Incidental and consequential damages including loss of production and profits, labor and material costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are defects due to the Units' use for ordinary water and fats, oil and grease (FOG), solvents, paints, or other chemicals which are not normally in the installation's intended use; failure to maintain the minimum ground covers specified in the installation instructions; the presence of improper materials into the system containing the Units; failure of the Units or the septic system due to improper sizing or improper zoning; 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. In no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party including from installation or shipment or from any unapproved liability clause of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all specifications established by state and local health agencies, all other applicable laws, and Infiltrator's installation instructions.

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

* * * * * * *

The above represents the Standard Limited Warranty offered by Infiltrator. Many states and countries have different warranty requirements. Any purchaser of the 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

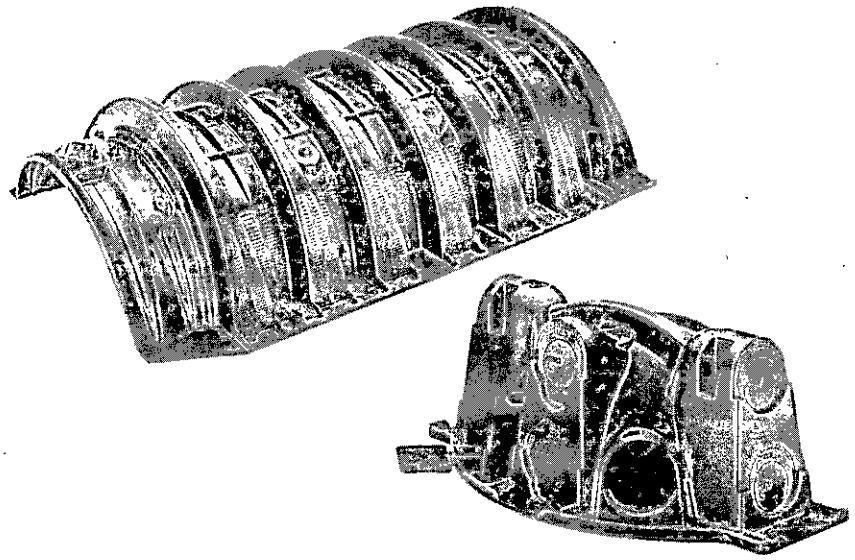
For technical assistance, installation instructions or customer service, call Infiltrator Systems at 800.689.7759.

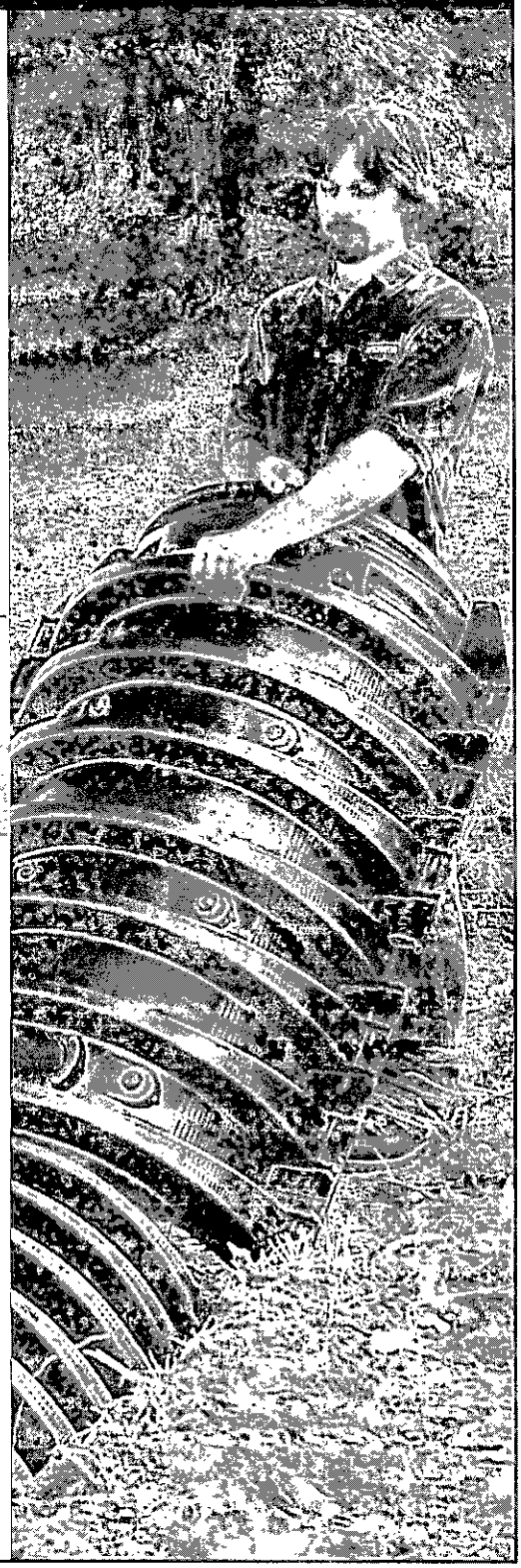
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E2010609AW-0

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:

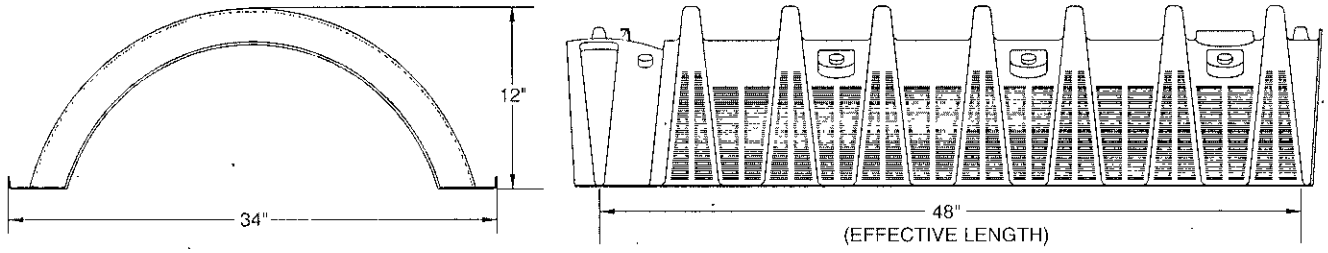
- Patent-pending tear-out seals on inlet ports provide a tight fit to the pipe
- Eight molded-in inlets/outlets allow for maximum piping flexibility
- Multiple ports eliminate pipe fittings and make looping ends easy
- Patent-pending MultiPort end cap fits on either end of the Quick4 Standard Chamber

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.

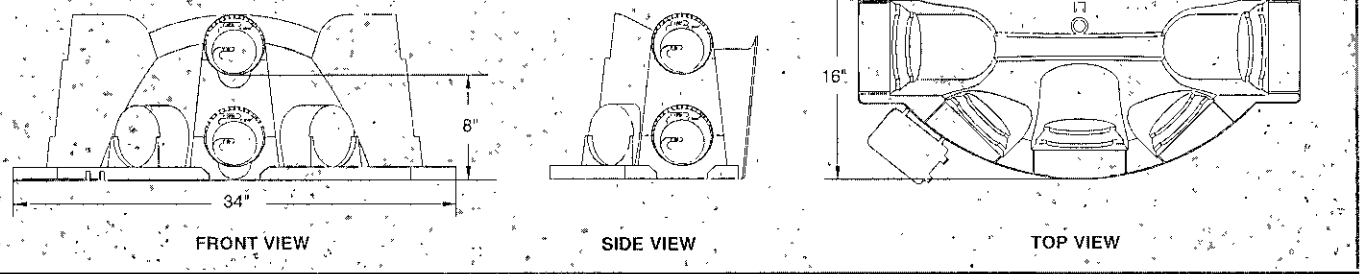
Approved in _____

The **Quick4® Standard** Chamber

The Quick4 Standard Chamber



MultiPort End Cap



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.

* * * * * *

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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systems inc.
6 Business Park Road • P.O. Box 768
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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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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 #: **30004817** GWS File #: **14004** Tax Parcel #: **217-232-51**

- 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):** 11/18/2015

Type of Installation: Residential - New System Lot Number: 0

Structure Type: HOUSE Size (ft^2): 0 # Bedrooms: 4 # Occupants: 4

Building Foundation: Water Supply: Private Well

II. Initial System Type: Pump to Approved **System Classification:** IIIb

Initial System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.3	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1000
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	1200	Total Trench Length (ft):	400
Maximum Trench Depth (in):	36	Depth of Media (in):	12	Distribution Device:	Pressure Manifold		

III. Repair System Type: PPBPS (pressurized) **System Classification:** IVa

Repair System Specifications:

Design Flow (gpd):	480	LTAR (gpd/ft^2):	0.3	Septic Tank Size (gal):	1500	Pump Tank Size (gal):	1000
Trench Width (ft):	3	Trench Spacing (ft):	9	Absorption Area (ft^2):	800	Total Trench Length (ft):	267
Maximum Trench Depth (in):	36	Depth of Media (in):	N/A	Distribution Device:	Manifold (LPP Distri		

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: Philo Walker

Signature: Philo Walker RS

Date Issued: 11/18/2010

Owner/Legal Agent: DIANE W. CAIN
Print Name

Signature: Diane W. Cain

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 #: **30004817** GWS File #: **14004**

IV. Permit Conditions/Comments:

- This type of septic system requires an inspection once every 5 years by our office. The system owner is responsible for any fees, as determined by the Mecklenburg County Board of Commissioners, associated with this inspection.
- 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 located at least 100 ft. (50 ft. minimum) from all private wells.
- All components of the septic system must be located a minimum distance from the normal pool elevation or mean high water mark for the nearby body of water. See plot plan for minimum setback requirements.
- Permitted LTAR value based on KSAT study provided by soil consultant.
- Flow from all gutters and downspouts shall be directed 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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- This IMPROVEMENT PERMIT is transferable.

DENR Authorized Agent: Philo Walker

Signature: Philo Walker RS

Date Issued: 11/18/2010

Owner/Legal Agent: DIANE W. CAIN
Print Name

Signature: Diane W. Cain

MECKLENBURG COUNTY
Health Department

November 10, 2010

JAMES SAMSON
16409 RED FEZ CLUB
CHARLOTTE, NC 28278

Re: Application for improvement permit for:
Property Site: FOREST HOME RD LOT 72B
Health Department file number: **14004**

Dear Property Owner or Owner's Agent:

The Mecklenburg County Health Department, Environmental Health Division on November 09, 2010 evaluated the above-referenced property at the site designated on the site plan that accompanied your improvement permit application. According to your application the site is to serve a 4 BEDROOM HOUSE, with a daily design flow of 480 gallons per day. The evaluation was done in accordance with the laws and rules governing wastewater systems in North Carolina General Statute 130A-333 and related statutes and Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rule .1900 and related rules.

Based on the criteria set out in Title 15A, Subchapter 18A, of the North Carolina Administrative Code, Rules .1940 through .1948, the evaluation indicated that the site is **UNSUITABLE** for a ground absorption sewage system. Therefore, your request for an improvement permit is **DENIED.** A copy of the site evaluation is enclosed. The site is unsuitable based on the following:

- ☒ Unsuitable soil topography and/or landscape position (Rule .1940)
- ☐ Unsuitable soil characteristics (structure or clay mineralogy) (Rule .1941)
- ☐ Unsuitable soil wetness condition (Rule .1942)
- ☐ Unsuitable soil depth (Rule .1943)
- ☐ Presence of restrictive horizon (Rule .1944)
- ☒ Insufficient space for septic system and repair area (Rule .1945)
- ☐ Unsuitable for meeting required setbacks (Rule .1950)
- ☐ Other (Rule .1946)

These severe soil or site limitations could cause premature system failure, leading to the discharge of untreated sewage on the ground surface, into surface waters, directly to ground water or inside your structure.

The site evaluation included consideration of possible site modifications, and modified, innovative or alternative systems. However, the Health Department has determined that none of the above options will overcome the severe conditions on this site. A possible option might be a system designed to dispose of sewage to another area of suitable soil or off-site to additional property.

For the reasons set out above, the property is currently classified **UNSUITABLE,** and an improvement

permit shall not be issued for this site in accordance with Rule .1948 (c).

However, the site classified as **UNSUITABLE** may be classified as **PROVISIONALLY SUITABLE** if written documentation is provided that meets the requirements of Rule .1948(d). A copy of this rule is enclosed. You may hire a consultant to assist you if you wish to try to develop a plan under which your site could be reclassified as **PROVISIONALLY SUITABLE.**

You have a right to an informal review of this decision. You may request an informal review by the soil scientist or environmental health supervisor at the local health department. You may also request an informal review by the N. C. Department of Environment and Natural Resources regional soil specialist. A request for informal review must be made in writing to the local health department.

You also have a right to a formal appeal of this decision. To pursue a formal appeal, you must file a petition for a contested case hearing with the Office of Administrative Hearings, 6714 Mail Center, Raleigh, NC 27699-6714. To get a copy of a petition form, you may write the Office of Administrative Hearings or call the office at (919) 733-0926 or from the OAH web site at www.oah.state.nc.us/form.htm. The petition for a contested case hearing must be filed in accordance with the provision of North Carolina General Statutes 130A-24 and 150B-23 and all other applicable provisions of Chapter 150B. N. C. General Statue 130A-335(g) provides that your hearing would be held in the county where your property is located.

Please note: If you wish to pursue a formal appeal, you must file the petition form with the Office of Administrative Hearings **WITHIN 30 DAYS OF THE DATE OF THIS LETTER.** The date of this letter is November 14, 2010. Meeting the 30-day deadline is critical to your right to a formal appeal. Beginning a formal appeal within 30 days will not interfere with any informal review that you might request. Do not wait for the outcome of any informal review if you wish to file a formal appeal.

If you file a petition for a contested case hearing with the Office of Administrative Hearings, you are required by law (N.C. General Statute 150B-23) to send a copy of your petition to the North Carolina Department of Environment and Natural Resources. Send the copy to: Office of General Counsel, N. C. Department of Environment and Natural Resources, 1601 Mail Service Center, Raleigh, NC. 27699-1601. *Do* ***NOT*** *send the copy of the petition to your local health department. Sending a copy of your petition to the local health department will* ***NOT*** satisfy the legal requirement in N.C. General Statute 150B-23 that you send a copy to the Office of General Counsel, NCDENR.

You may call or write the local health department if you need any additional information or assistance.

Sincerely,

Philo Walker RS

PHILO WALKER, RS
Authorized Agent - DENR

Encl: (2)