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Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 4 bedroom single family residence on Lot # 53 WATERTREE LANDING Subdivision, Iredell County, North Carolina.

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December 6, 2007
Project #: 01-1430
Design By: Rollans Soil and Environmental Services

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	MID-ATLANTIC CUSTOM BUILDERS
Address:	P.O. BOX 3792 Mooresville, NC 28117
Phone:	704-202-5568
County:	Iredell
Location:	WATERTREE LANDING LOT 53
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	480
System Flow:	19.7

Design Specifications

Drainfield Size:	410
Loading Rate (gpd/ft.^{2}):	0.3
Depth of Gravel in Trench:	NA (25% reduction)
Gravel Size:	NA (25% reduction)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	69
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	12.01
Dosing Volume:	200.80
Supply Manifold:	4 in. SCH 80 PVC
Supply Manifold Length:	4 ft. (minimum)
Supply Manifold Volume:	N/A
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	1.23
Elevation Head:	6.70
Total Dynamic Head:	11.42
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 at Pressure Manifold
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services.

WATERTREE LANDING LOT 53
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1230
TOTAL LATERAL LENGTH:	410
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	69
TOTAL DYNAMIC HEAD:	11.42
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	200.80
PUMP TANK DRAW DOWN*:	9.6
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

WATERTREE LANDING LOT 53

Project #: 01-1430

LAYOUT FOR 4 BEDROOM HOME

December 6, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		4.7			100.00		
INSTR. 1			104.70				
HOUSE			96.10	8.60			
TANK			95.40	9.30			
1	PINK			1.30	103.40	38	38
2	BLUE			2.80	101.90	51	51
3	ORANGE			3.30	101.40	83	83
4	**RED**			**4.60**	**100.10**	**157**	**150**
5	***PINK***			***5.80***	***98.90***	***145***	***145***
6	***ORANGE***			***6.50***	***98.20***	***118***	***115***
7	BLUE			7.40	97.30	95	95
					Total	**687**	**677**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
****System***	***410***	***0.3***	***ACCEPT.***	***0.3***	***25% RED.***	**PRESSURE MANIFOLD**
Repair	267	0.3	MOD.	0.3	PPBPS	LOW PRESSURE

Notes:

** TBM located on left front corner lot 47 (see site plan)

**TBM is assumed to be 100'

**All measures in feet

**Nitrification lines are demonstrated on contour via colored pin flags

**BS, HI, and FS indicate rod readings

PRESSURE MANIFOLD TAPSHEET - WATERTREE LANDING LOT# 53

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area	Line LTAR
4	**RED**	100.1	***150***	SCH 40 1/2	**7.11**	450	0.16
5	***PINK***	98.9	**145**	SCH 40 1/2	**7.11**	435	0.17
6	***ORANGE***	98.2	***115***	SCH 80 1/2	**5.48**	345	0.16
	total	**feet =**	**410**	**gal/min =**	~~19.7~~		
			Des. Flow	**480**			
			Pump Run=	**10.19**			
			soil LTAR	**0.300**			
			LTAR +5%	**0.315**			
			LTAR with ACCEPTED	**0.33075**			
			LTAR with ACCEPTED + 5%	**0.3472875**			