PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	E & J Development
Address:	227 Hideaway Lane Mooresville, NC 28117
Phone:	704-201-6465
County:	Iredell
Location:	Autumn Grove LOT 63
Source of Wastewater Flow:	4 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	480
System Flow:	35.55

Design Specifications

Drainfield Size:	400
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:	94
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	16.36
Dosing Volume:	195.90
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:	2.23
Elevation Head:	15.30
Total Dynamic Head:	22.46
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.

Autumn Grove LOT 63
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	480
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	94
TOTAL DYNAMIC HEAD:	22.46
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	195.90
PUMP TANK DRAW DOWN*:	9.3
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.*

Autumn Grove LOT 63

Project #: 01-1043

LAYOUT FOR 4 BEDROOM HOME

November 5, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.3			100.00		
INSTR. 1			102.30				
HOUSE				18.80	83.50		
TANK				16.50	85.80		
1	PINK			2.30	100.00	56	56
2	ORANGE			3.10	99.20	72	72
3	BLUE			3.60	98.70	95	95
4	RED			4.40	97.90	95	95
5	PINK			5.20	97.10	92	92
6	***ORANGE***			***6.20***	***96.10***	***91***	***80***
7	***BLUE***			***7.00***	***95.30***	***92***	***80***
8	***RED***			***7.60***	***94.70***	***92***	***80***
9	***PINK***			***8.20***	***94.10***	***92***	***80***
10	***ORANGE***			***8.90***	***93.40***	***93***	***80***
11	BLUE			9.70	92.60	54	54
					Total	**924**	**864**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***400***	***0.30***	***ACCEPT.***	***0.30***	***25% RED.***	**PRESSURE MANIFOLD**
Repair	464	0.30	MOD.	0.30	PPBPS	LOW PRESSURE

Notes:

** TBM located on lot corner. (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 - Autumn Grove LOT#63

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
6	***ORANGE***	96.1	***80***	SCH 40 1/2	**7.11**	240
7	***BLUE***	95.3	***80***	SCH 40 1/2	**7.11**	240
8	***RED***	94.7	***80***	SCH 40 1/2	**7.11**	240
9	***PINK***	94.1	***80***	SCH 40 1/2	**7.11**	240
10	***ORANGE***	93.4	***80***	SCH 40 1/2	**7.11**	240

total	**feet =**	**400**	**gal/min =**	**35.55**
		Des. Flow	**480**	
		Pump Run=	**5.51**	
		soil LTAR	**0.30**	
		LTAR +5%	**0.315**	
		LTAR with ACCEPTED	**0.33075**	
		LTAR with ACCEPTED + 5%	**0.3472875**	

CALCULATIONS

Location Autumn Grove

Project Number 01-1043

Lot No: Lot 63

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.3	$^{gpd/ft^2}$
25% RED.? (YES OR NO)	YES	
Supply Line Length	94	ft.
Supply Line Volume	16.356	gal.
Required Feet of Line	400	ft.
Amount of Line from Layout	400	ft.
Gallons per Minute	35.55	$^{gal}/_{min}$
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	261.2	gal.
Dosing Volume	195.90	gal.

Note: Dosing Volume based on75% of lateral line volume

Tank Draw Down	9.3	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.51	minutes
Elevation Head	15.3	ft.
Pressure Head	2	ft.
Friction Factor	2.37	ft./100 ft. *(From the interpolater.)*
Friction Head	2.23	ft.
Total Dynamic Head (+15%)	22.46	ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42