PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner:	John Papatzanakis
Address:	208 Laview Shores Lp Mooresville, NC 28117
Phone:	704-819-2533
County:	IREDELL
Location:	CL&T SECTION 8, LOT 341
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Gallons Per Day Flow:	600
System Flow:	17.21

Design Specifications

Drainfield Size:	135
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:	24 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	54
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	9.40
Dosing Volume:	180.71
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:	0.45
Elevation Head:	11.90
Total Dynamic Head:	17.22
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.

CL&T SECTION 8, LOT 341
PRESSURE MANIFOLD DESIGN

DESIGN FLOW (gpd):	600
SOIL APPLICATION RATE (gpd/ft.^{2}):	0.3
TOTAL AREA TRENCH BOTTOM:	405
TOTAL LATERAL LENGTH:	135
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	133.3333333
SUPPLY LINE LENGTH:	54
TOTAL DYNAMIC HEAD:	17.22
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	180.71
PUMP TANK DRAW DOWN*:	5.8
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.

**Pump tank draw down based on a volume basis of 31 gallons per inch. Draw down may vary among pump tank manufacturers.*

CL&T SECTION 8, LOT 341

Project #: 01-1680

LAYOUT FOR 2 BEDROOM EXPANSION OF EXISTING 3 BEDROOM HOME (TOTAL 5 BRMS) October 31, 2011

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		9.4			100.00		
INSTR. 1			109.40				
HOUSE CNR				13.30	96.10		
P. TANK				15.70	93.70		
1	RED			4.40	105.00	64	64
2	PINK			6.10	103.30	24	24
3	ORANGE			5.70	103.70	32	32
4	BLUE			6.70	102.70	35	35
5	***PINK***			***8.80***	***100.60***	***45***	***45***
6	***RED***			***10.50***	***98.90***	***58***	***45***
7	***ORANGE***			***13.20***	***96.20***	***49***	***45***
8	***EXISTING BED***					***3 BEDROOMS***	***3 BEDROOMS***
9	ORANGE			21.20	88.20	62	62
10	RED			23.60	85.80	48	48
11	RED			20.20	89.20	61	61
12	ORANGE			22.70	86.70	72	72
					Total	**550**	**533**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***135***	***0.30***	***MOD.***	***0.30***	***PPBPS &***	**PRESSURE**
****EXCLUDING EXISTING BED***					**Gravel Bed**	**MANIFOLD**
Repair	398	0.30	*MOD.*	0.30	PPBPS	TS-II PRETREATMENT LOW PRESSURE

Notes:

** TBM located on front right corner
**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
**Three Bedroom existing bed based on existing septic permit on file with Iredell County Health Dept.

PRESSURE MANIFOLD TAPSHEET -CL&T SECTION 8, LOT 341

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	# of Panels	Volume/Dose	Actual Volume/Dose	% Difference
5,6,7	PINK,RED,ORANGE		135	SCH 40 1/2	7.11	31	72.284	74.66	3.18
8	Existing Bed		3 BRM	SCH 80 3/4	10.1	0	108.426	106.05	2.19
						31	180.71	180.71	
	total	feet =	135	gal/min =	17.21				
			Des. Flow	600					
			Pump Run=	10.50					
			soil LTAR	0.30					

CALCULATIONS

Location CL&T SECTION 8

Project Number 01-1680

Lot No: Lot 341

No. of Bedrooms	5	
Design Flow	600	$^{gal}/_{day}$
LTAR	0.30	$^{gpd/ft^2}$
PPBPS.? (YES OR NO)	YES	
Supply Line Length	54	ft.
Supply Line Volume	9.396	gal.
Required Feet of Line	133.3333	ft.
Amount of Line from Layout	135	ft.
Gallons per Minute	17.21	$^{gal}/_{min}$
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Panel Volume	3.6	gal.
# of Panels	31	
Dosing Volume	180.71	gal.

Note: Dosing Volume based on 66% of # of panels times 3.6 gal/panel plus existing system volume of 163.25.

Tank Draw Down	5.8	*Generic Draw Down of 31 gal.per in.*
Pump Run Time	10.50	minutes
Elevation Head	11.9	ft.
Pressure Head	2	ft.
Friction Factor	0.84	ft./100 ft. *(From the interpolater.)*
Friction Head	0.45	ft.
Total Dynamic Head (+20%)	17.22	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