ROLLANS ***Soil & Environmental Services***

2120 Graham Road, Mount Ulla, NC 28125 *Phone/Fax (704) 278 – 0989*

Ashley Rollans, NC Licensed Soil Scientist
(704) 746-5046
Rollansfortcj@aol.com

Brady Freeman, Registered Sanitarian
(704) 746-6497
bfree209@yahoo.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 5 bedroom single family residence on Lot 97 in Anniston Subdivision Iredell County, North Carolina.

Contents: **Page**

Information for the Installer---------- 1

Design Information
- Design Specifications---------- 2-3
- Layout Specifications---------- 4
- System Tapsheet---------- 5

Site Plan/System Plan---------- 6

Calculations---------- 7

Profile Descriptions---------- 8

December 27, 2006
Project No.01-1005
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Anniston LLC
Address:	17824 Statesville Rd STE 112 Conover, NC 28031
Phone:	
County:	Iredell
Location:	Anniston Subdivision Lot 97
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	600 gpd
System Flow:	39.36

Design Specifications

Drainfield Size:	415
Loading Rate:	.25 gpd/ft.^{2}
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1500 gal.
Pump Tank Size:	1500 gal.
Estimated Supply Line Length:	452
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	78.65
Dosing Volume:	231.55
Supply Manifold:	N/A
Supply Manifold Length:	N/A
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:	13.70
Elevation Head:	11.60
Total Dynamic Head:	31.39
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 per lateral
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services

ANNISTON LOT 97
LP PPBPS

DESIGN FLOW:	600
SOIL APPLICATION RATE:	.25 gpd/ft²
TOTAL AREA TRENCH BOTTOM:	1245
TOTAL LATERAL LENGTH:	415
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	320.00
SUPPLY LINE LENGTH:	452
TOTAL DYNAMIC HEAD:	31.39
MANIFOLD SIZE:	N/A
DOSING VOLUME:	231.55
PUMP TANK DRAW DOWN*:	7.5
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.*

Anniston Lot 97

Project #:01-1005

LAYOUT FOR 5 BEDROOM HOME — December 27, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.8			100.00		
INSTR. 1			101.80				
HOUSE CNR				17.40	84.40		
P. TANK				17.90	83.90		
1	*ORANGE*			*10.00*	*91.80*	*30*	*30*
2	*PINK*			*11.30*	*90.50*	*62*	*60*
3	*BLUE*			*12.10*	*89.70*	*105*	*100*
4	*RED*			*13.30*	*88.50*	*50*	*50*
5	*ORANGE*			*14.50*	*87.30*	*75*	*75*
6	*PINK*			*15.40*	*86.40*	*115*	*100*
7	BLUE			16.60	85.20	141	141
8	RED			17.70	84.10	163	163
9	ORANGE			18.60	83.20	104	104
					Total	**845**	**823**

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR	TRENCH SYSTEM	DISTRIBUTION
** System*	*415*	*0.25*	*MOD.*	*0.250*	*PPBPS*	*LOW PRESSURE*
Repair	408	0.25	MOD.	0.25	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground (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

LP PPBPS TAPSHEET - Anniston Lot 97

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*ORANGE*	91.8	*30*	0.156	**0.41**	90	7
2	*PINK*	90.5	*60*	0.156	**0.41**	180	14
3	*BLUE*	89.7	*100*	0.156	**0.41**	300	23 — 32 panel
4	*RED*	88.5	*50*	0.156	**0.41**	150	12
5	*ORANGE*	87.3	*75*	0.156	**0.41**	225	17
6	*PINK*	86.4	*100*	0.156	**0.41**	300	23
							96

total	**feet =**	**340**	**gal/min =**	**39.36**
		Des. Flow	**600**	
		Pump Run=	**5.88**	
		soil LTAR	**0.25**	
		LTAR +5%	**0.2625**	
		LTAR with mod.	**0.27**	
		LTAR with mod.. + 5%	**0.2835**	

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston Subdivision

Project Number 01-1005

Lot No: Lot 97

No. of Bedrooms	4	
Design Flow	480	$^{gal}/_{day}$
LTAR	0.25	$^{gal}/_{ft^2\ day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	452	ft.
Supply Line Volume	78.648	gal.
Required Feet of Line	320	ft.
Amount of Line from Layout	415	ft.
Gallons per Minute	39.36	$^{gal}/_{min}$
	Note: Flow/hole (.41gpm) x # of panels	
Required Septic Tank Capacity	1500	gal.
Minimum Standard Tank Size	1500 gal.	
Panel Volume	3.6	gal.
# of Panels	96	
Dosing Volume	232	gal.
	Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel	
Tank Draw Down	7.5	*Generic Draw Down of 31 gal.per in.*
Pump Run Time	5.88	minutes
Elevation Head	11.6	ft.
Pressure Head	2	ft.
Friction Factor	3.03	ft./100 ft. *(From the interpolater.)*
Friction Head	13.70	ft.
Total Dynamic Head (+15%)	31.39	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