ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 5 bedroom single family residence on Lot 58 in Anniston Subdivision Iredell County, North Carolina.

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September 13, 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 58
Source of Wastewater Flow:	5 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	600 gpd
System Flow:	37.72

Design Specifications

Drainfield Size:	400
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:	183
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	31.84
Dosing Volume:	221.90
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:	5.54
Elevation Head:	11.50
Total Dynamic Head:	21.90
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 Subdivision Lot 58
LP PPBPS

DESIGN FLOW:	600
SOIL APPLICATION RATE:	.25 gpd/ft.2
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400.00
SUPPLY LINE LENGTH:	183
TOTAL DYNAMIC HEAD:	21.90
MANIFOLD SIZE:	N/A
DOSING VOLUME:	221.90
PUMP TANK DRAW DOWN*:	10.6
SEPTIC TANK SIZE:	1500 gal.
PUMP TANK SIZE:	1500 gal.

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

Anniston Lot 58

Project #:01-1005

LAYOUT FOR 5 BEDROOM HOME

September 13, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		8.3			100.00		
INSTR. 1			108.30				
HOUSE CNR				10.70	97.60		
P. TANK				10.90	97.40		
1	***BLUE***			***4.40***	***103.90***	***58***	***50***
2	***PINK***			***5.10***	***103.20***	***61***	***60***
3	***RED***			***5.70***	***102.60***	***73***	***70***
4	***ORANGE***			***6.20***	***102.10***	***86***	***75***
5	***BLUE***			***6.60***	***101.70***	***97***	***75***
6	***PINK***			***7.20***	***101.10***	***108***	***70***
7	ORANGE			7.70	100.60	108	108
8	BLUE			8.30	100.00	128	128
9	PINK			8.80	99.50	145	145
10	ORANGE			9.60	98.70	60	60
					Total	924	841

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
****System***	***400***	***0.25***	***MOD.***	***0.25***	***PPBPS***	***LOW PRESSURE***
Repair	441	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 58

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*BLUE*	103.9	*50*	0.156	**0.41**	150	12
2	*PINK*	103.2	*60*	0.156	**0.41**	180	14
3	*RED*	102.6	*70*	0.156	**0.41**	210	16
4	*ORANGE*	102.1	*75*	0.156	**0.41**	225	17
5	*BLUE*	101.7	*75*	0.156	**0.41**	225	17
6	*PINK*	101.1	*70*	0.156	**0.41**	210	16
							92
	total	**feet =**	**400**	**gal/min =**	**37.72**		

Des. Flow	**600**
Pump Run=	**5.88**
soil LTAR	**0.25**
LTAR +5%	**0.2625**
LTAR with mod.	**0.5**
LTAR with mod.. + 5%	**0.525**

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston Subdivision

Project Number 01-1005

Lot No: Lot 58

No. of Bedrooms 5

Design Flow 600 $^{gal}/_{day}$

LTAR 0.25 $^{gal}/_{ft^2\ day}$

PPBPS? (YES OR NO) YES

Supply Line Length 183 ft.

Supply Line Volume 31.842 gal.

Required Feet of Line 400 ft.
Amount of Line from Layout 400 ft.

Gallons per Minute 37.72 $^{gal}/_{min}$

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 92
Dosing Volume 222 gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

Tank Draw Down 10.6 *Generic Draw Down of 21 gal.per in.*

Pump Run Time 5.88 minutes

Elevation Head 11.5 ft.
Pressure Head 2 ft.
Friction Factor 3.03 ft./100 ft. *(From the interpolater.)*
Friction Head 5.54 ft.

Total Dynamic Head (+15%) 21.90 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