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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 61 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

May 7, 2007
Project #:01-1005
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant: Anniston, LLC

Address: 17824 Statesville Rd., Suite 112
Cornelius, NC 28031
Phone: (704) 362-5007
County: Iredell
Location: Anniston Lot 61

Source of Wastewater Flow: 5 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 600 gpd
System Flow: 39.36

Design Specifications

Drainfield Size: 425
Loading Rate: 0.3
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: 191
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 33.23
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: 5.79
Elevation Head: 22.60
Total Dynamic Head: 34.95

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 61
LP PPBPS

DESIGN FLOW:	600
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	1275
TOTAL LATERAL LENGTH:	425
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	333.33
SUPPLY LINE LENGTH:	191
TOTAL DYNAMIC HEAD:	34.95
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 61

Project #:01-1005

LAYOUT FOR 5 BEDROOM HOME

May 7, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		0.5			100.00		
INSTR. 1			100.50				
HOUSE CNR				12.70	87.80		
P. TANK				19.40	81.10		
1	***PINK***			***1.80***	***98.70***	*42*	*40*
2	***BLUE***			***3.60***	***96.90***	*71*	*70*
3	***DARK PINK***			***5.10***	***95.40***	*94*	*80*
4	***ORANGE***			***6.50***	***94.00***	*96*	*80* 333
5	***PINK***			***8.00***	***92.50***	*100*	~~*80*~~ 64
6	***BLUE***			***9.50***	***91.00***	*78*	*75*
7	DARK PINK			11.10	89.40	78	78
8	ORANGE			12.70	87.80	60	60
9	PINK			13.90	86.60	62	62
10	BLUE			15.40	85.10	62	62
11	DARK PINK			17.60	82.90	64	64
12	ORANGE			19.80	80.70	70	70
13	PINK			21.40	79.10	70	70
					Total	947	891

Add 60' for Extra Palm

466

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
** System*	*425*	*0.3*	*MOD.*	*0.3*	*PPBPS*	*LOW PRESSURE*
Repair	466	0.25	MOD.	0.25	PPBPS	LOW PRESSURE
	891					

400 - 6 Bdrm @ .3

491 - 6 Bd @ .25

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 61

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
1	*PINK*	*98.70*	*40*	0.156	**0.41**	120	9
2	*BLUE*	*96.90*	*70*	0.156	**0.41**	210	16
3	*DARK PINK*	*95.40*	*80*	0.156	**0.41**	240	18
4	*ORANGE*	*94.00*	*80*	0.156	**0.41**	240	18
5	*PINK*	*92.50*	*80*	0.156	**0.41**	240	18
6	*BLUE*	*91.00*	*75*	0.156	**0.41**	225	17
	total	**feet =**	**425**	**gal/min =**	**39.36**		96

Des. Flow	**600**
Pump Run=	**5.88**
soil LTAR	**0.3**
LTAR +5%	**0.315**
LTAR with mod.	**0.6**
LTAR with mod.. + 5%	**0.63**

.156 equals 5/32 inch hole

CALCULATIONS

Location Anniston Subdivision

Project Number 01-1005

Lot No: Lot 61

No. of Bedrooms	5	
Design Flow	600	$^{gal}/_{day}$
LTAR	0.3	$^{gal}/_{ft^2\,day}$
PPBPS? (YES OR NO)	YES	
Supply Line Length	191	ft.
Supply Line Volume	33.234	gal.
Required Feet of Line	333.33	ft.
Amount of Line from Layout	425	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	22.6	ft.
Pressure Head	2	ft.
Friction Factor	3.03	ft./100 ft. *(From the interpolater.)*
Friction Head	5.79	ft.
Total Dynamic Head (+15%)	34.95	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